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GEOGRAPHY & INDUSTRY

EDISON ELECTRIC INSTITUTE BULLETIN

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PUBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

July, 1950-1951

SOURCE AND DISPOSAL OF ENERGY—MONTH OF JULY

	1951	1950	%
GENERATION* (Net)			
By Fuel Burning Plants	22,111,334,000	19,262,454,000	+14.8
By Water Power Plants	8,281,156,000	7,510,372,000	+10.3
Total Generation	**30,392,490,000**	**26,772,826,000**	**+13.5**
Add—Net Imports Over International Boundaries	175,000,000	103,309,000	+69.4
Less—Company Use	109,527,000	109,273,000	+ 0.2
Less—Energy Used by Producer	649,349,000	641,154,000	+ 1.3
Net Energy for Distribution	**29,808,614,000**	**26,125,708,000**	**+14.1**
Lost and Unaccounted for	4,145,525,000	3,488,821,000	+18.8
Sales to Ultimate Customers	**25,663,089,000**	**22,636,887,000**	**+13.4**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of July 31st			
Residential or Domestic	38,512,829	36,697,274	+ 4.9
Rural (Distinct Rural Rates)	1,644,847	1,571,422	+ 4.7
Commercial or Industrial:			
Small Light and Power	5,506,303	5,433,653	+ 1.3
Large Light and Power	242,988	232,485	+ 4.5
Other Customers	159,474	152,478	+ 4.6
Total Ultimate Customers	**46,066,441**	**44,087,312**	**+ 4.5**
KILOWATTHOUR SALES—During Month of July			
Residential or Domestic	5,778,765,000	5,033,775,000	+14.8
Rural (Distinct Rural Rates)	951,867,000	818,309,000	+16.3
Commercial or Industrial:			
Small Light and Power	4,875,093,000	4,277,374,000	+14.0
Large Light and Power	12,729,024,000	11,260,340,000	+13.0
Street and Highway Lighting	223,031,000	199,822,000	+11.6
Other Public Authorities	637,124,000	563,712,000	+13.0
Railways and Railroads:			
Street and Interurban Railways	249,960,000	253,596,000	− 1.4
Electrified Steam Railroads	171,660,000	183,624,000	− 6.5
Interdepartmental	46,565,000	46,335,000	+ 0.5
Total to Ultimate Customers	**25,663,089,000**	**22,636,887,000**	**+13.4**
Revenue from Ultimate Customers	**$457,799,100**	**$412,436,800**	**+11.0**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended July 31st			
Kilowatthours per Customer	1,929	1,773	+ 8.8
Average Annual Bill	$54.78	$51.59	+ 6.2
Revenue per Kilowatthour	2.84¢	2.91¢	− 2.4

* By Courtesy of the Federal Power Commission.

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 19 OCTOBER, 1951 No. 10

EEI Objectives Realized Through Unflagging Efforts of Committee Members

THE stately phrases composed at the Edison Electric Institute's founding 18 years ago to express the association's goals contain a fine blend of idealism and practicality. Not expressed, but deeply understood by EEI members, was that a tremendous amount of human energy and ability would have to be devoted each year to keep those words from becoming meaningless.

That they are rich in meaning today is a tribute to the unflagging effort of a host of EEI committee members who, pushing forward in their various fields, have helped the electric industry stand forth as one of the most progressive and forward-looking of U. S. industries, characterized by solid contributions to the well-being of the American people.

The EEI committee organization has some 1200 committee members participating in the activities of 50 working groups. This development of the committee structure and functions has not been haphazard or capricious, but has closely followed the needs of an industry whose continuing growth is a modern phenomenon.

Embodied in the work of the EEI committees is the character, as well as the accomplishments, which have produced the electric industry's progress. The committees concerned with sales and the seeking of new or better ways for electricity to serve industry, commerce, agriculture, and the home complement the efforts of those concerned with increasing the efficiency of electric company operation through advances in engineering, accounting, and other fields.

The development of new loads and customers gives impetus to advances in equipment and operating methods so that service may be provided to the best advantage of consumer and company; in turn, progress in the generation and distribution of power and in company operation stimulates the search for customers and new electricity uses so that new equipment and techniques may be most beneficially employed. This is a perpetual process in which the EEI committees play an important part, the self-generating drive which has made the electric industry increasingly vital to the nation, and, at the same time, increasingly able to handle growing responsibilities under conditions of peace or war.

Through their widely circulating reports, recommendations, and documents, as well as through the discussions and exchanges of experiences from which these publications are born, the EEI committees provide valuable aid to the improvement of local electric service and to the companies' over-all preparedness efforts. Another factor, which can hardly be overestimated, is the stimulus which such committee work gives to progressive thought and effort throughout the industry in every aspect of electric company service and operation which comes under committee consideration.

Those making up the EEI committees are leaders in their respective fields in the electric industry. Their principal reward is in the intangible but satisfying awareness that their special aptitudes and knowledge are being used to continue the record of industry progress in the public interest. Through their participation, EEI committee members are enabled to bring back to their companies a deeper cognizance of their specific fields of interest and a breadth of vision which may have important bearing on future company progress.

To approach idealistic goals, careful attention must be given to practical details. There is a great deal of research, study, and plain hard work involved in considering problems large and small, whether they concern industry equipment and materials requirements to meet the demands of all-out war, or whether they are connected with the proper use of a pig-brooder.

The net effect of the infinite capacity for taking pains, which is displayed by EEI committee members, is seen throughout the operation of the U. S. electric industry. These men and women and those in similar groups before them have immeasurably contributed to the development of an industry which, nurtured in an atmosphere of economic freedom, generates two-and-a-half times the electricity produced annually by Russia and all her satellites.

Providing over-all direction of committee formation and activities is the Institute's Board of Directors. Drawn

EEI OBJECTIVES

1. The advancement in the public service of the art of producing, transmitting and distributing electricity, and the promotion of scientific research in such field.

2. The ascertainment and making available to the members and the public of factual information, data and statistics relating to the electric industry.

3. To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of the consumer, investor and employee.

—Edison Electric Institute Constitution, Article II

GEORGE M. GADSBY
Chairman of the Board of Directors and EEI President

largely from among chief executives of member companies, the Board's membership is limited to 45, one-third of whom are elected each year to serve three-year terms. An Advisory Committee, consisting of 25 members, also chosen from member company executives, acts in a consulting capacity to the Institute on matters of broad electric utility policy.

The 14 General Committees report directly to the Board of Directors, which also exercises general supervision over the committees of the Accounting, Commercial, and Engineering Divisions. In addition to the work of these standing groups, particular problems are also dealt with by special committees formed by the Board of Directors as required. One such committee, assigned to the study of excess profits taxes and other levies, has been of great value to the industry and its customers in helping to present to the committees of Congress the tax situation of the electric utilities.

A brief survey of the activities of the General Committees and Committees of the Engineering Division for the current administrative year, 1951-1952, is presented on the pages immediately following. A similar survey of committee plans and activities of the Accounting and Commercial Divisions will be presented in the November issue of the BULLETIN.

D. C. LUCE
Chairman of the Codes and Standards Committee

Codes and Standards Committee

Principal responsibility of the Codes and Standards Committee, headed by D. C. LUCE, Public Service Electric and Gas Co., Newark, N. J., is general direction of activities relating to standards, codes, and other technical regulations, especially the relations of the electric utility industry with other associations and rule making bodies. The committee reports directly to the EEI Board of Directors.

The committee provides guidance on matters of industry policy to the electric utility representatives acting jointly with representatives of other groups such as the telephone, telegraph and railroad industries on matters of plant coordination, as well as those groups such as the National Electrical Manufacturing Association, the National Fire Prevention Association, and the American Standards Association, in the varied field of standardization.

Chairman of the Codes and Standards Committee D. C. LUCE is Vice President in Charge of Combined Operations and a Director of Public Service Electric and Gas Co. A Lehigh University graduate, he joined Public Service in 1924 as a cadet engineer and later served as Kearny Station chief engineer, general superintendent of electric generation, electric department general manager, and vice president in charge of electric operation.

EEI General Committees

Accident Prevention Committee

The aims and objectives of the Accident Prevention Committee are:

1. To lower the accident frequency and severity rates in the electric industry and thereby improve its standing among the 40 major industries in the United States.
2. To help member companies conserve manpower and materials for war power.
3. To help reduce compensation and medical costs.

The Accident Prevention Committee is composed of 52 outstanding safety and operating men from all sections of the United States and Canada. W. F. BROWN, Consolidated Edison Co. of New York, Inc., New York, N. Y., is the chairman. The companies represented on the committee employ approximately 55 per cent of the total industry personnel. The committee meets at least three times each year in a centrally located city convenient to the majority, with one meeting scheduled in the Western regions every two years. It has nine major subcommittees and 19 individual project sponsors, or liaison representatives.

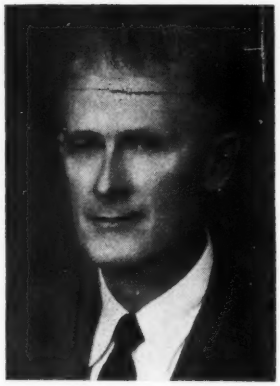
The accident records and statistics have brought to light the kinds of accidents that are occurring in the industry, how often, and how serious. This information is essential to the proper direction of accident prevention efforts. Through accident exchange the industry learns about the more serious accidents, as well as the steps taken to prevent recurrence.

The analysis of fatalities prepared each year by the committee, for example, has indicated year after year that electric shock and burn deaths account for seven of every ten of the industry's fatalities. It also reveals that many of these are caused by the failure to provide or wear rubber protective devices which were available or could have been made available to the employee.

The Safety Training Subcommittee is preparing training materials to cope with the hazards. A field manual on "The Use and Care of Hot Line Tools" is in process of development, as is "New Purchase Specifications for Linemen's Climbers, Belts and Safety Straps."

The Visual Aids Subcommittee's job is to produce films and other visual aids dealing with hazards peculiar to the electric industry. A recent film, "Coal to Kilowatts," is currently being shown to the electric industry.

The Safety Poster Subcommittee prepares attractive colored safety posters covering hazards peculiar to the electric industry.



W. F. BROWN
Chairman of the Accident Prevention Committee

The Seasonal Hazards Subcommittee carries on studies of special hazards and how to cope with them in both hot and cold seasons. This group is presently attacking the problem of hot weather electrocutions.

The Resuscitation Subcommittee acts as the industry's eyes and ears on all matters pertaining to resuscitation. This group, composed of men well-versed in the subject, has access to the top medical authorities on artificial respiration.

The Safety Performance Award Subcommittee has recently been organized to handle the new safety performance award plan. This activity provides a medium for bringing distinction and honor to companies with outstanding safety performance.

Other activities include research on electrical resuscitation and television antennas, monthly letters to safety directors in the electric industry, review of information on governmental activities, and a study of ways and means of improving methods of reporting accidents.

The Accident Prevention Committee maintains close liaison with other EEI committees, i. e., Transmission and Distribution, Prime Movers, Industrial Relations, and Transportation, and with other electrical associations and the National Safety Council.

The committee is constantly striving for ways to help the electric industry do a better safety job. To this end inquiries and suggestions are invited. Many electric companies have produced frequency and severity rates of less than half the industry average. The committee is convinced that, since most of the causes and remedies are known, more companies can and should reduce their accident rates. The Accident Prevention Committee is prepared to help where help is needed and wanted.

Chairman W. F. BROWN of the Accident Prevention Committee has been Safety Director of Consolidated Edison Co. of New York, Inc., for the past seven years. In safety work for 30 years, he is a vice president of the American Society of Safety Engineers and lists the Greater New York Safety Council, President's Industrial Safety Conference, AGA Accident Prevention Committee, and National Safety Council among his affiliations. He has been with Consolidated Edison for 25 years.

Electric Power Survey Committee

The function of the Electric Power Survey Committee is to provide current comprehensive information concerning the present and future power situation in the United States. The work of the committee is carried out under the leadership of WALKER L. CISLER, The Detroit Edison Co., Detroit, Mich., Chairman; CLARENCE MAYOTT, The Hartford Electric Light Co., Hartford, Conn., Vice Chairman; and Chandler W. Jones, New England Electric System, Boston, Mass., Chairman of the Subcommittee on Manufacturing.

The functions of the committee are accomplished by making periodic surveys of (a) the nation's peak loads, capabilities, reserve margins, and energy requirements, and (b) the scheduled production of heavy electric power equipment. Because the situation at the present time is so complicated and changes so rapidly, a Task Group has been organized to follow many aspects of the situation on a day-to-day basis.

The electric power surveys have been conducted at semiannual intervals since the spring of 1947. Representatives of the electric power systems or power supply areas in all parts of the country participate in the surveys. They report complete information with respect to peak loads, capabilities, and reserve margins in their own areas, including actual operating results for the past year and forecasts for three or four years in advance. These data are reviewed and assembled on a regional and national basis.

The country's leading manufacturers of heavy electric power equipment also participate in the semiannual surveys. They present complete data concerning orders on hand, production schedules, shipments, and open manufacturing capacity. They also discuss material allotments, and other pertinent problems.

The Task Group has had frequent contact with the equipment manufacturers and many of the operating systems. Through this activity detailed information concerning the problems of expanding the power facilities of the country has been compiled.

WALKER L. CISLER
Chairman of the Electric Power Survey Committee

These committee activities are making available much important information concerning the position of the industry, particularly with respect to its scheduled expansion and its ability to carry the nation's power loads.

Committee Chairman WALKER L. CISLER is Executive Vice President and a Director of The Detroit Edison Co. An army lieutenant in World War I, he joined Public Service Electric and Gas Co. after graduating from Cornell University in 1922. Rising to assistant general manager of the electric department, he served on the WPB while on loan from the company in 1941. In 1943 he joined Detroit Edison and was granted leave of absence to enter the Army, where he attained the rank of colonel. While on General Eisenhower's postwar staff, he directed the rehabilitation of German utilities. In late 1945 he returned to Detroit Edison as chief engineer of power plants and was named executive vice president in 1948.

Financing and Investor Relations

Through research studies and group discussions, the Financing and Investor Relations Committee, under the chairmanship of HAROLD H. SCAFF, Ebasco Services Inc., will undertake to provide the electric industry with comprehensive information on utility financing and the maintenance of good investor relations, both of which are of major importance to the successful completion of the industry's expansion program. A detailed resume of the committee's proposed activities for the coming year will appear in an early issue of the BULLETIN.

An NYU graduate, Chairman HAROLD H. SCAFF, Vice President and Director, Ebasco Services Inc., joined the Electric Bond and Share system in 1923 as junior accountant. After working on formation of the United Gas system in Texas and serving as accounting consultant for American Power & Light subsidiaries, he was named assistant

HAROLD H. SCAFF
Chairman of the Financing and Investor Relations Committee

general auditor of Ebasco Services Inc. in 1936. He was made comptroller and director of both Ebasco Services and Electric Bond and Share Co. in 1940, and in 1943 was named to his present position. Active in EEI work, he has served on the Depreciation Committee and was vice chairman of the Financing and Investor Relations Committee in 1950. A past chairman of the Accounting Division Executive Committee and Committee on Financing Utility Capital Requirements, he is presently chairman of the Committee on Application of Accounting Principles.

Industrial Relations Committee

The major objective of the Industrial Relations Committee is to provide services to the companies in the industry, in the field of industrial relations. This objective will be continued this year under the chairmanship of F. E. VERDIN, The Cleveland Electric Illuminating Co., Cleveland, Ohio.

Because of the nature of the problems which develop in the industrial relations field, the current exchange of information with respect to negotiations and the like is of outstanding value to its members.

Supplementing such round table discussions, regular studies are conducted in the fields of wages, benefits, economic education, wage-hour regulations, wage and salary stabilization requirements, and recruitment—to name a few major ones. It is expected that all of these activities will be carried on during the current year and that some new fields will be explored.

Analyses of more effective techniques of personnel administration, improved methods of organization planning and administration, further progress in the field of management and executive development, closer liaison with the educational institutions from the standpoint of recruitment, and case study material are some of the subjects the committee anticipates examining during the year ahead.

One of the highlights of the committee's year is always the Annual Industrial Relations Conference. This year it is planned to hold the conference in Cincinnati, November 5, 6, and 7, at which the principal topics for discussion will be:

Executive Inventory and Development
The Communications Problem
Economic Information Program
Wage Adjustment Criteria

These discussions will be conducted on a seminar or workshop basis, during which considerable use will be made of the "Phillips 66" or "Buzz Session" method.

The full membership of the committee numbers 47, and there are about 150 "corresponding representatives," many of whom participate in industrywide studies and surveys as well as the Annual Industrial Relations Conference.

Meetings will be held approximately monthly in various locations, in order to cooperate as closely as possible with local groups of people in the industry.

Chairman of the Industrial Relations Committee F. E. VERDIN is Director of Personnel for The Cleveland Electric Illuminating Co. After serving as instructor of engineering math at Syracuse University, where he graduated in 1921, he spent eight years in sales engineering. This was followed by 12 years of personnel work with companies of the Niagara Hudson system and two years of personnel consulting activities. Seven years ago he joined CEI, where he is now in charge of all phases of labor relations, safety, training, and personnel administration.

Insurance Committee

The Insurance Committee, under the chairmanship of I. M. CARPENTER,

F. E. VERDIN
Chairman of Industrial Relations Committee

I. M. CARPENTER
Chairman of the Insurance Committee

Ebasco Services Inc., New York, N. Y., will continue its studies of the many insurance problems which are today confronting the electrical industry. As in the past, a major portion of these activities will continue to be performed by the subcommittees.

At the present time the Subcommittee on Boiler and Machinery Insurance is in the process of arranging for conferences with representatives of insurance underwriters in view of contemplated increased rates for these forms of insurance coverage, with the idea of presenting the electrical industry's side of the picture and endeavoring to establish closer relationship with these insurance representatives.

The Subcommittee on Boiler and Machinery Insurance has very definite ideas on this subject, and if these ideas can be transmitted and accepted by the insurance underwriters, they will prove of considerable benefit to the electrical utility industry.

Because of the problems introduced by the possibility of atomic attack, there are many conflicting ideas in the insurance industry and in the legislative bodies as to the position which the United States Government should take on war damage insurance. Developments will be followed closely by the Subcommittee on War Damage Insurance in the interests of the electrical utility industry.

The Subcommittee on Liability Coverage is planning a study of the problems which are resulting from materially higher court awards on third party actions. These increased judgments are due in part to an enhanced claim-mindedness on the part of the general public and in part to existing economic conditions. They have already resulted

in increased costs for third party liability insurance for almost all public utilities, and in some extreme cases have even necessitated the cancellation and replacement of insurance contracts. It is a subject of prime importance to the electric utility industry and will be followed closely during the ensuing year by this subcommittee.

The Insurance Committee will also continue its close cooperation with other committees of the Institute.

Insurance Committee Chairman I. M. CARPENTER is Manager of the Insurance Department of Ebasco Services Inc. Except for service as a naval officer in World War I, his career has been entirely in the insurance field since 1916. He joined Electric Bond and Share as head of the insurance department in 1923 and upon formation of Ebasco Services two years later was appointed to his present position. He is an active member of many insurance associations and related groups.

Legal Committee

The Legal Committee, with 24 members under the chairmanship of RALPH M. BESSE, The Cleveland Electric Illuminating Co., Cleveland, Ohio, will continue to investigate and report on any legal matter referred to it by the Institute or by any of its committees, and to develop and exchange information relative to legal developments in the electric utility field.

Three general meetings dealing with topics current in judicial, legislative, and administrative fields have been scheduled by the committee. The first of these meetings was held last September 19 in New York City, and the second and third, which will probably extend over two-day periods, are slated to occur this winter and in May, 1952. Other specific plans include the organization of a one- or two-day seminar for claims men in the industry.

RALPH M. BESSE
Chairman of the Legal Committee

EARLE S. THOMPSON
Chairman of the Membership Committee

Committee Chairman RALPH M. BESSE, Vice President and General Counsel of The Cleveland Electric Illuminating Co., graduated magna cum laude from Heidelberg College in 1926 and received a J. D. degree from the University of Michigan in 1929. Entering the employ of Squire, Sanders & Dempsey that same year, he was named a partner of the firm in 1940. In 1948 he joined The Cleveland Electric Illuminating Co. as a vice president and was made general counsel the following year. The legal, treasurer's, accounting, and rates and statistics departments of the company are under his jurisdiction. A member of prominent legal associations, he is also active in many civic organizations.

Membership Committee

The Membership Committee, under the chairmanship of EARLE S. THOMPSON of The West Penn Electric Co. (Inc.), New York, N. Y., examines all applications for Institute membership and makes its recommendations and reports directly to the EEI Board of Directors.

Chairman EARLE S. THOMPSON is President and Director of the West Penn Electric Co. (Inc.). A trustee and 1914 graduate of Bowdoin College, he served with the National Fire Insurance Co. and Hornblower & Weeks before joining the American Waterworks and Electric Co. in 1923. In 1938 he was elected president and director of the latter company, predecessor of West Penn Electric. Among the companies of which he is a director are Monongahela Power Co., Potomac Edison Co., Windsor Coal Co., West Penn Railways, City Bank Farmers Trust Co., and Ritz-Carlton Hotel Co. He is a trustee of the Dry Dock Savings Bank.

Prize Awards Committee

The Prize Awards Committee, under direction of Chairman GEORGE E. WHITWELL of the Philadelphia Electric Co., Philadelphia, Pa., conducts all Institute-sponsored prize contests with the exception of the Charles A. Coffin Award.

The committee appoints contest judges and endeavors to stimulate the widest possible participation in each competition. In addition, the committee reviews all new prize awards offered for EEI sponsorship by various donors.

Full details on the 1951-52 contest rules and awards, which will be presented next year at the Institute's Sales Conference and Annual Convention, are described on page 351 of this issue of the BULLETIN.

Chairman GEORGE E. WHITWELL is Vice President in charge of Sales of the Philadelphia Electric Co. An MIT graduate, he was a research engineer for Anaconda Copper before entering the Army in World War I. Subsequent to teaching chemical engineering at the University of Washington, he served with various utilities before joining Philadelphia Electric in 1931. He originated the National Better Light Better Sight activity in 1933 and, as a result, two years later received the James H. McGraw Award for cooperation in the advancement of the electric industry. First president of the merged Chamber of Commerce and Board of Trade of Philadelphia, he is a past president of PEA and was for several years chairman of the AGA Laboratories Managing Committee.

Purchasing and Stores Committee

Since the work of the Purchasing and Stores Committee involves both purchasing and stores matters, the committee functions under a chairman with the assistance of two vice chairmen. One of the vice chairmen is selected from purchasing personnel, while the other is selected from stores personnel. The chairman for the ensuing year is R. L. LEACH of the Georgia Power Co., Atlanta, Ga. The vice chairman for purchasing is C. F. OGDEN of The Detroit Edison Co., Detroit, Mich., while the vice chairman for stores is C. H. ZUR NIEDEN of the Philadelphia Electric Co., Philadelphia, Pa. W. M. Holls of the Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore,

GEORGE E. WHITWELL
Chairman of the Prize Awards Committee

R. L. LEACH
Chairman of the Purchasing and Stores Committee

Md., is the secretary-treasurer of the committee. The above, together with the following, constitute the executive committee of the group: E. N. Scott, Long Island Lighting Co., Mineola, N. Y.; H. E. Hodgson (immediate past chairman), Wisconsin Power and Light Co., Madison, Wis.; R. P. Snow, The Cleveland Electric Illuminating Co., Cleveland, Ohio; J. B. Homsher, Pennsylvania Water and Power Co., Baltimore, Md.; and J. B. Thomas, Alabama Power Co., Birmingham, Ala.

The present committee is composed of 55 active members, three honorary members, 54 correspondent members, and three guest members representing utilities located in the Dominion of Canada.

During the present year the committee plans to study the following purchasing subjects: (1) contractural problems, (2) conducting interviews, (3) an effort to find some equitable measure of performance in purchasing. The committee also expects to study the following stores subjects: (1) unit costs in stores operations, (2) continuance of standard packaging program, (3) mechanical material handling devices, and (4) salvage operations under conditions involving shortages of materials (time permitting).

In addition, the committee intends to make an effort to obtain information relative to the problem of making the best use of manpower through planning, organization, and the development of leadership qualities in supervisory personnel. This subject will be of interest to both the purchasing and stores membership of the committee.

Governmental controls on materials are of paramount importance, and it is planned to make every effort to have informed representatives of the control branches of the government present at the next general meeting of the committee, so that current problems may be discussed with those responsible for the administration of the controls as they exist. This meeting is scheduled for May 11 and 12, 1952, at the Roosevelt Hotel, New Orleans, La. Following the close of the formal meeting, it is planned that interested members of the committee will visit the storerooms and Purchasing Department of New Orleans Public Service, Inc., the host utility.

Committee Chairman R. L. LEACH is General Storekeeper of the Georgia Power Co. After attending the Georgia School of Technology, he joined Georgia Power in 1907 and through varied service was named to his present post in 1926. On leave of absence in 1942 he worked on redistribution of utility stores of surplus materials created by war regulations. In 1943 he served as southeastern regional utility engineer for the WPB.

Rate Research Committee

The Rate Research Committee, under its chairman, HARRY I. MILLER, Wisconsin Public Service Corp., Oshkosh, Wis., is concerning itself mainly with problems related to increasing costs of operation. Many companies are finding it necessary to increase rate levels, particularly end rates. The committee plans to devote considerable time to discussion of rate cases pending and recently decided, and to the study of methods and procedures adopted by those companies represented and Commission reaction to different methods of approach.

Study will be given to the rate problems concerned with new loads, such as electric space heating, with the effect of new tax laws on earnings, and with any new regulatory provisions adopted by any Commission.

HARRY I. MILLER
Chairman of the Rate Research Committee

Because of the probability of so many companies finding it necessary to increase rates in the near future, the committee plans to hold four meetings during the fiscal year to attempt better to disseminate information valuable to the industry in its rate problems.

Committee Chairman HARRY I. MILLER is Manager of Rates and Research for the Wisconsin Public Service Corp. A former consultant and department head in several government agencies, he served on the WPB; as an army consultant in Japan, Germany, and Austria; in Europe on an ECA assignment; and as chief of DEPA's Minor Requirements Branch. He graduated in electrical engineering from the University of Wisconsin in 1921.

J. FRANK GASKILL
Chairman of the Rural and Urban Development Committee

Rural and Urban Development Committee

The Rural and Urban Development Committee, under the chairmanship of J. FRANK GASKILL, Philadelphia Electric Co., Philadelphia, Pa., will continue last year's program of studying the various problems of area development and how utilities are meeting these problems in the territory they serve.

The work is broken down into four subcommittees: Civic Development, Industrial Development, Natural Resources and Agricultural Development, and Travel and Recreational Development. Each of these subcommittees will prepare a report of their findings, which will be submitted in the form of a final report, in order to disseminate the information to the various member companies.

Five regional forums were held during the past year: the New England region at Boston, Mass.; the North

E. H. SCOTT
Chairman of the Statistical Committee

Central area at Cleveland, Ohio; the North Middle-West region at Minneapolis, Minn.; the Southern region at New Orleans, La.; and the Middle Atlantic region at Philadelphia. One more regional conference for the West Coast is being considered for the coming year.

Consideration will also be given to the holding of a national conference in order to provide a forum for a frank and open discussion of the problems encountered, the methods used, and the advantages of an area development program for electric operating companies.

Committee Chairman J. FRANK GASKILL is Sales Manager of the Philadelphia Electric Co. Graduating from Swarthmore College in 1910, he gained experience with Westinghouse and General Electric before serving as a captain in France during World War I. Joining Philadelphia Electric in 1919, he progressed, through successive steps, to sales manager in 1936. Other activities include service as past chairman of the Commercial Section, PEA, and past chairman of the Industrial Power and Heating Committee, EEI.

Statistical Committee

The Statistical Committee, under the chairmanship of E. H. SCOTT, of The Detroit Edison Co., Detroit, Mich., will carry on its work of providing up-to-date information on the electric industry with special emphasis on the problems of the day. Now that the 1950 census figures are being reported, there are numerous industry problems to be solved in connection therewith.

A subcommittee is collecting and studying various methods of forecasting kilowatthour sales, revenues, expenses, and loads employed by individual electric companies. This work is being carried on with the possible aim of making forecasts of these items more uniform as to the methodology. Thus, when individual company forecasts are combined nationally the result should be improved.

To minimize duplication of reports by electric companies the annual questionnaires, sent to electric companies by the statistical department of the Institute and by the insurance companies and investment analysts, were simplified and combined. During the forthcoming year the reactions to this new report of the several interested groups will be studied. D. M. Tonge of the American Gas and Electric Service Corp., New York, N. Y,. was in charge of the subcommittee doing this work.

The committee's proposed Index of Electric Power Output, compiled on a national basis, is being carried forward and studied for possible imperfections. It is similar to the recognized general business indices in setup, and attempts to do away with the sometimes erroneous conclusions obtained from year-to-year comparisons of output. This index is now being sent on a private basis to members of the EEI Board of Directors.

The committee's report on customer definitions is now before the Board of Directors of the Institute.

The committee will continue its practice of consulting with the EEI Statistical Department and reviewing the weekly, monthly, annual (Statistical Bulletin) and special statistical data prepared by the Department for the Institute. A subcommittee will be appointed to study the regional reporting of industry statistics with the view of obtaining more uniformity in areas.

Statistical Committee Chairman E. H. SCOTT is Assistant Controller of The Detroit Edison Co. Graduating from the University of Michigan in 1924, he joined Detroit Edison in the construction department the same year. Next assigned to the budget division, he was transferred to the rate division in 1937. He was made statistician in 1941 and named to his present post in 1949. He is a member of several prominent trade associations and professional societies.

Transportation Committee

The Transportation Committee, under the chairmanship of S. G. PAGE, Duquesne Light Co., Pittsburgh, Pa., will hold an early fall meeting in New York City to complete plans for the coming year's work. The practice of holding joint meetings with the AGA Motor Vehicle Committee will be continued.

S. G. PAGE
Chairman of the Transportation Committee

The Annual Spring Conference of Utility Fleet Operators, to be sponsored by the combined EEI-AGA committee, will be held in Philadelphia in April, 1952. This will be the major meeting of the year and, besides a comprehensive round table symposium of current problems, will feature papers by prominent technical men from various phases of the automotive industry.

The committee has received numerous suggestions that it hold a number of regional meetings in addition to its Spring Conference to facilitate discussion of current operation and maintenance questions. This suggestion is now being studied by a subcommittee and it is expected that action can be taken on this matter at the November organization meeting.

An attempt will be made this year to standardize the type of records maintained for operating statistics in an effort to allow intercompany comparisons, such as customers per vehicle, miles of line per vehicle, miles per gallon of gasoline, cost per mile, average annual miles per vehicle, etc.

Driver training and vehicle accident prevention will be the major objective of the Subcommittee on Safety.

Committee Chairman S. G. PAGE is Automotive Manager of the Duquesne Light Co. He joined Duquesne in 1924 upon graduation from Iowa State College with a B.S. in electrical engineering. In 1940, after work in various engineering capacities, he was named to his present Duquesne post and was made general superintendent of Equitable Auto, a service company. He is a member and past Pittsburgh section chairman of the Society of Automotive Engineers.

EEI Engineering Committees

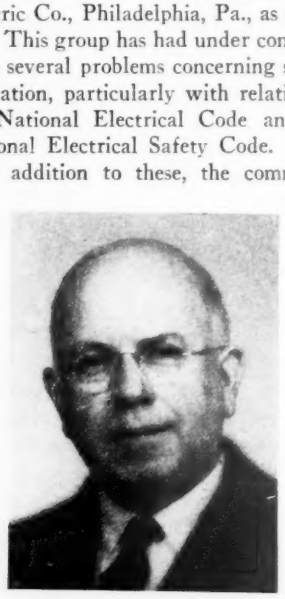
Engineering Division General Committee

The Engineering Division General Committee, whose chairman is HOWARD P. SEELYE, The Detroit Edison Co., Detroit, Mich., serves as a coordinating agency for the activities of the five engineering committees which constitute the Engineering Division. It also deals with other engineering matters of a more general nature than those covered by these other committees. The membership is comprised of the chairmen of the five engineering committees and 15 other members-at-large.

In addition to reviewing the programs of the five other committees for the purpose of correlating any matters in which they might conflict or overlap, and assisting in the consideration of any questions of policy, this committee has at present two active subcommittees. One of these is the Air Pollution Subcommittee, under the chairmanship of Stanley Stokes, Union Electric Co. of Missouri, St. Louis, Mo., which has been collaborating with a similar group from AEIC in keeping in touch with the problem of air pollution and smoke prevention, and giving general direction to EEI's activities in this field.

The other subcommittee is the Codes and Standards Correlating Subcommittee, with P. H. Chase, Philadelphia Electric Co., Philadelphia, Pa., as chairman. This group has had under consideration several problems concerning standardization, particularly with relation to the National Electrical Code and the National Electrical Safety Code.

In addition to these, the committee expects to give some consideration during the coming year to the relationship and attitude of engineering colleges and their graduates toward the electric power industry, in collaboration with other EEI committees which are also studying this matter.



HOWARD P. SEELYE
Chairman of the Engineering Division General Committee

Chairman HOWARD P. SEELYE of the Engineering Division General Committee is Senior Engineer of The Detroit Edison Co. Except for World War I service, he has been with Detroit Edison since 1915. Primarily concerned with distribution engineering before his appointment as senior engineer in 1937, he is author of *Electric Distribution Engineering* and co-author of *Economics of Electric Distribution,* both books published by McGraw-Hill. He is a past chairman of the Transmission and Distribution Committee.

Electrical Equipment Committee

The Electrical Equipment Committee, of which J. H. FOOTE, Commonwealth Services Inc., Jackson, Mich., is chairman, is mainly concerned with problems of bulk power supply, design of major electrical installations, and operating troubles with electrical stations and equipment. Problems of serving large utilization equipment, techniques of operating and maintenance of systems and equipment, and the engineering phases of integration and interconnection of systems are all the concern of this committee.

A. M. DEBELLIS, Consolidated Edison Co. of New York, Inc., New York, N. Y., is vice chairman of the committee for the new year.

Six divisions of the committee handle this extensive program of work. For the current year the division chairmen are: System Engineering, H. E. Deardorf, The Dayton Power and Light Co., Dayton, Ohio; Utilization, A. C. Gohlke, The Cleveland Electric Illuminating Co., Cleveland, Ohio; System and Apparatus Troubles, A. M. deBellis, Consolidated Edison Co. of New York, Inc.; Apparatus and Design, C. C. Farrell, Philadelphia Electric Co., Philadelphia, Pa.; Foreign Practice, A. V. DeBeech; Operation and Maintenance, C. L. Derrick, The Hartford Electric Light Co., Hartford, Conn.

Seventy-two members of the committee represent 58 companies. Contacts are maintained with representatives of many foreign countries and with companies in Canada. Representatives of the larger electrical equipment manufacturers sit with the committee in open sessions.

The first meeting of the current administrative year was held at the New Ocean House at Swampscott, Mass., on October 8 and 9, 1951. A winter meeting in Cincinnati, Ohio, February 11 and 12, 1952, and a spring meeting in Chicago in May, 1952, are also being scheduled.

Chairman J. H. FOOTE is Vice President and Director of Commonwealth Services Inc. and President and Chief Engineer in charge of its subsidiary, Commonwealth Associates, Inc. He has served on committees of EEI and its predecessor, NELA, since 1921, when he was a member of the Great Lakes Division Electrical Apparatus Committee, of which he later became chairman. He is also actively engaged in committee work of the American Society for Testing Materials, American Standards Association, Association of Edison Illuminating Companies, and American Society for Engineering Education. A fellow of AIEE, he is past president of the Michigan Engineering Society and a director of the Michigan Society of Professional Engineers.

Hydraulic Power Committee

The Hydraulic Power Committee with HIBBERT M. HILL, Northern States Power Co., Minneapolis, Minn., as chairman, devotes itself to consideration of hydroelectric power plants, their design, operation, and maintenance. The committee has a membership of 36, including five representatives of consulting engineering firms, who serve as guest members.

Two subcommittees are currently active. Norman F. Williams of Southern Services, Inc., Birmingham, Ala., leads the Subcommittee on Cavitation and Pitting. His subcommittee has presented an interim report, and continuation of

J. H. FOOTE
Chairman of the Electrical Equipment Committee

HIBBERT M. HILL
Chairman of the Hydraulic Power Committee

F. A. REDDING
Chairman of the Meter and Service Committee

G. V. WILLIAMSON
Chairman of the Prime Movers Committee

J. A. PULSFORD
Chairman of the Transmission and Distribution Committee

the study has been found profitable. Paul H. Yelton, California Electric Power Co., Riverside, Calif., heads the Subcommittee on Artificial Precipitation. This is a relatively new field and one of great interest to hydraulic engineers. Mr. Yelton's subcommittee thus has a continuing study.

The Subcommittee on Automatic and Supervisory Control of Hydroelectric Plants completed its assignment and was discharged at the last annual meeting. Continued interest in this subject is evidenced by the requests received for copies of the report.

The committee customarily holds one annual meeting at which, in addition to subcommittee reports, papers of general interest are heard. Particular stress has been given in these papers to operating and maintenance problems, and to general discussion of the points made by the speakers.

The next annual meeting has been tentatively set for May, 1952, but the place is yet to be determined.

The secretary of the committee is G. E. Watkins of EEI Headquarters.

Committee Chairman HIBBERT M. HILL is Chief Engineer of the Northern States Power Co. A graduate of the University of Minnesota in 1924, where he later served as instructor, he was employed by the U. S. Coast and Geodetic Survey, U. S. Engineers, and St. Anthony Falls Water Power Co. before joining NSP as hydraulic engineer in 1941. As an officer in the Corps of Engineers during the war, he supervised design of cantonments and air fields. He is a past president of the Northwestern section of ASCE.

Meter and Service Committee

The chairman of the Meter and Service Committee this year is F. A. REDDING, Southern California Edison Co., Alhambra, Calif., with C. V. MOREY, Consolidated Edison Co. of New York, Inc., New York, N. Y., serving as vice chairman. There are 45 full members and 35 corresponding members, distributed throughout the nation.

During the past several years the Meter and Service Committee has held its semiannual meetings jointly with the AEIC Service Methods Committee. In the meeting held last May at Pasadena, Calif., a reorganization plan was proposed under which the two committees can operate without duplication of effort.

For functional purposes the membership of both committees has been divided into four divisions, each with a division head. No member will serve simultaneously in more than one division, and the division head will be changed annually. The scope of each division is limited to a particular phase of operating problems. Each division functions as a large subcommittee of joint EEI and AEIC membership, with responsibility to investigate all problems arising in its assigned field.

The four division assignments are: Service Equipment, Meters and Metering Equipment, Codes and Rules, and Meter Department Management. The respective division heads for this year are: J. Lineback, The Cincinnati Gas and Electric Co., Cincinnati, Ohio; G. B. M. Robertson, Philadelphia Electric Co., Philadelphia, Pa.; George Yanda, The Cleveland Electric Illuminating Co., Cleveland, Ohio; and W. G. Knickerbocker, The Detroit Edison Co., Detroit, Mich.

Among the subjects under study at this time are:

Test Switches and Color Codes
Code for Electricity Meters
Corrosion Prevention and Protective Coatings
Service Cable Development
Watthour Demand Registers
Meter Terminal Blocks
High-Voltage Meter Installations
Time Switches and Street Lighting Control
Large Low-Voltage Installations
Service Rules
Recording of Committee Decisions
Selection and Training of Personnel
Meter Department Records
Service Entrances for Low Structures
Standardization of Detachable Meter Mountings
Standardization of "A" Base Meter Mountings
Cyclometer Registers

The problem of possible restriction of the production of watthour meters is, of course, being given earnest consideration. Data indicating the importance of allocating material for the manufacture of watthour meters in sufficient quantity to avoid the serving of customers on a flat rate basis is being compiled and transmitted to the authorities in Washington, D. C. This activity will provide an accurate forecast of industry-wide requirements sufficiently in advance of need to permit effective action in assuring an adequate watthour meter supply.

The first meeting of the committee for the current administrative year was held at Purdue University, October 1 to 3.

Chairman F. A. REDDING is Superintendent of the Shop and Test Division of the Southern California Edison Co. Graduating from the University of Colorado in 1914, he joined Colorado Power Co., advancing to advertising manager and assistant district manager. In 1920 he joined Southern California Edison

and after varied service in the test department and meter division was named to his present post in 1948.

Prime Movers Committee

Now entering its fortieth year, the Prime Movers Committee plans for the coming season a full schedule of activity that will do credit to its long record of service. Its chairman is G. V. WILLIAMSON of the Union Electric Co. of Missouri, St. Louis, Mo., and its secretary is W. L. Chadwick of the Southern California Edison Co., Los Angeles, Calif.

Members regard the round table discussions on design and operation as one of the committee's most rewarding activities. These discussions cover the selection of equipment and designs for new thermal-electric plants, as well as operating experiences with equipment and plants after installation. John Drabelle of Iowa Electric Light and Power Co., Cedar Rapids, Iowa, has been the leader of the Design Round Table, and starting this year, John M. Driscoll, Consolidated Edison Co. of New York, Inc., New York, N. Y., will lead the General Round Table. With some 18 million kw of thermal-electric capacity having been ordered for utilities during the past year, and with the large plant expansion placed in service since the end of World War II, both design and operating problems have been receiving considerable attention.

It is an axiom of power plant operators that "trouble" is their sharpest teacher, and during recent years an extra effort has been made to have members bring to meetings full and frank reports of such operating experiences. The meeting of last May in Oklahoma City illustrates this effort, for at that gathering two boiler-furnace puffs and serious steam turbine difficulties were thoroughly studied through drawings, photographs, and pieces of equipment. This phase of operating experience is again being stressed this year, and seems particularly appreciated by the companies with smaller staffs who find their larger associates have the same problems as they.

Because of the wide variety of equipment and materials discussed, and because an untrammelled expression of opinion is sought, the round table discussions are closed. It is planned, however, to invite more members of other EEI committees to attend Prime Movers meetings, as well as to cooperate on several joint efforts. To assist members and their staffs who cannot attend meetings, extra efforts are being made to issue comprehensive minutes of discussions at each meeting.

A most valuable service to the industry as a whole is represented by the printed reports in those subcommittees which are organized from time to time to study subjects of particular interest. These have included Boiler and Combustion, Steam Turbines and Condensers, Coal and Ash Handling, Gas Turbines, Oil and Gas Power, Power Station Data, Metallurgy, Steam Carryover, and Power Station Chemistry.

The subcommittee on the latter, holding separate meetings, has been particularly productive in meeting the intensified complexity of chemical problems encountered with higher steam temperatures and pressures, lowering coal quality, and wider use of petroleum fuels. Metallurgy has renewed importance because of wartime scarcity of critical alloys.

Meetings are usually held in cities that permit visits to significant new power plant installations. To broaden this activity as well as to favor more distant members, meetings are being distributed over a wider geographical area. During the coming season the places of meeting will be convenient to recent installations of extreme high steam temperatures, resuperheat, and super-size turbo-generators and boilers.

Chairman G. V. WILLIAMSON is Superintendent of Steam Engineering for the Union Electric Co. of Missouri. After graduation from Washington University with the degrees of B. S. and M. E., he joined Union Electric in 1922. Since that time he has been closely associated with the design and operation of the company's six steam power plants, which have a total capacity of about one million kilowatts. A member of Tau Beta Pi and a fellow of the ASME, he has been active in education programs for undergraduate and post-graduate engineers. He has also served as a vice president of the Air Pollution & Smoke Prevention Association of America.

Transmission and Distribution Committee

The Transmission and Distribution Committee, with J. A. PULSFORD of Public Service Electric and Gas Co., Newark, N. J., as chairman, functions through five groups and various subcommittees. The five groups and their sponsors are: Overhead Systems, G. H. Fiedler, Rochester Gas and Electric Corp., Rochester, N. Y.; Underground Systems, W. M. Penny, Union Electric Co. of Missouri, St. Louis, Mo.; General Engineering, J. W. Anderson, Philadelphia Electric Co., Philadelphia, Pa.; Standards and Specifications, W. E. Losie, The Detroit Edison Co., Detroit, Mich.; Safe Design, Construction and Operation, F. W. Nimmer, Ohio Edison Co., Akron, Ohio.

The committee plans three meetings this year. The fall meeting was held in Rochester, N. Y., October 10 and 11. The winter meeting is scheduled for St. Louis, February 14 and 15, 1952, and the spring meeting for Chicago, May 6 and 7, 1952.

Rapid load growth, engineering manpower shortage, and engineering problems arising from material shortage have thrown an extremely heavy work load on transmission and distribution engineers throughout the industry. The Transmission and Distribution Committee will plan its programs to assist these engineers in every way possible to do a better job with less man-hours of engineering. It plans to accomplish this objective in four basic ways:

1. By accelerating the completion of standards and specifications being prepared by EEI alone or jointly with other associations.
2. By presenting reports on special studies on new developments by member companies.
3. By holding panel discussions on controversial transmission and distribution problems.
4. By providing a general discussion period in each meeting at which any member can discuss any subject or ask any question he wishes.

Closed sessions will be held, as in the past, when suitable subjects require them.

Defense Electric Power Administration representatives will be invited, when it seems necessary, to discuss and answer questions on engineering problems arising from government control of materials.

From time to time manufacturers will be invited to describe new technical developments of vital interest to the transmission and distribution engineer, and opportunities will be given for discussion of such developments by the members.

Chairman J. A. PULSFORD is Distribution Plant Engineer of Public Service Electric and Gas Co. An alumnus of Harvard University with the degrees of A.B. and B.S. in electrical engineering, he has served Public Service Electric and Gas in various capacities since his graduation in 1923. He was sponsor of the Underground Group of the Transmission and Distribution Committee during 1947, 1948, and 1949.

Power for Progress

By H. B. Bryans

President, Philadelphia Electric Company

An address before the Philadelphia Electric Association, Philadelphia, Pa., September 18, 1951

MUCH has been heard in recent years about "cheap" government power. The din has been constant and persistent. But you know and I know there is no government power project in the United States today which can operate more economically or sell power cheaper, on a comparable basis, than privately-managed companies.

No one has ever figured out a way to get something for nothing. Whatever cheapness there is in government power rates exists because taxpayers somewhere make up deficits in the form of higher taxes. All of us are paying for the cheap power sold by government power projects in various sections of the country. Actually, the taxes alone paid by business-managed electric light and power companies on each kilowatthour sold are more than the wholesale rate per kilowatthour charged in the TVA territory![1]

Expensive Government Power

If government power advocates are sincere in their claim that they can produce and sell electricity cheaper than privately-managed companies can, then I challenge them to have Congress place government power on a comparable basis with business-managed companies. If this is done, it will be proved very quickly that government power, far from being cheap, is considerably more expensive. England learned this lesson to its sorrow, for today electricity there costs substantially more than before nationalization, and further increases are in prospect.[2]

As all of us know, the ultimate objective of the Federal power program is the nationalization of the electric power industry. Once this is done, the power bloc can secure a tight hold over all industry and business.

In furtherance of this program we have such proposals as the nine colossal Federal power projects, familiar to all of us, which would cost the taxpayers at least $60,000,000,000 at today's prices.[3] These power authorities largely parallel existing lines and require great quantities of scarce materials and manpower so urgently needed elsewhere.

In trying to sell this huge Federal power program to the country, its champions dwell on such things as "flood control" and "soil conservation." No one objects to flood control or soil conservation. However, the pattern of the past—and it will not likely be changed in the future— is that dams approved for flood control are ultimately turned into electric power plants. And dams used for electric power do not prevent floods.

It is rather ironic that the United States, which is leading the world fight against totalitarianism, is thus threatened by it from within. All of us can be proud that the electric power companies are in the forefront of the fight for the preservation of the American way of life with all its freedoms, privileges, and responsibilities. We are leading the battle against government in business by fighting government power. Opinion polls show we are making progress, and that wherever and whenever our story has been clearly told, government power has been decisively defeated.

Acquainting Public With Facts

The need to acquaint the public with the facts is a great challenge. If we are to prevent totalitarianism in this country, if we are to preserve the Bill of Rights and our form of government, then we must carry our story to the public in even more vigorous fashion than we have in the past. It must be emphasized over and over in our advertising and public relations programs.

Curiously enough, the public takes its power supply pretty much for granted. It gives little thought to who provides it. A recent Opinion Research survey[4] indicates that two out of every ten private company customers think their electricity comes from a government operation, or, and this seems incredible, they do not know who serves them.

Support for private ownership and operation of utilities is strongest, the survey points out, among customers who know they get service from a business-managed company. If each customer could be informed he is being served by a business-managed company, the survey indicates that the overall sentiment for government ownership would probably drop about 7 per cent, which is a considerable victory.

If we are to sell ourselves permanently to the American people, we must provide a service that is the best, the cheapest, and the most reliable possible.

Minimize Service Interruptions

The widespread damage caused by the heavy storm in this area last November, while repaired swiftly and in such a way as to earn commendation of press and public, uncovered a vulnerable spot. While it is true that customers generally view such emergencies with some degree of understanding and tolerance, nonetheless they would welcome practical evidence of engineering skill and foresight that would minimize even the infrequent service interruptions that now occur.

Business-managed utilities today are supplying abundant and low-cost electricity through the medium of the most efficiently-designed and the most economically-operated electric generating and distribution system in the world, but the challenge of the future is ever greater and greater dependability standards and "storm-proof" service.

The electric utility business is a basic industry. It has earned a high place in the economic life of the nation because it was built on good service and fair rates.

Over the years, adequate and reliable power supply, good management, wise promotion of the advantages of electricity in the home, shop, and factory have induced more and more people to use more and more electricity until today the United States, with 7 per cent of the world population, uses 42½ per cent

[1] EEI *Statistical Bulletin*, No. 18 (1950)

	1949	1950
Taxes per kilowatthour paid by U. S. electric industry	4.0 mills	4.2 mills
TVA annual report for 1950 TVA average rates per kilowatthour to large industries and Federal agencies	3.5 mills	3.3 mills

[2] Annual report of British Electricity Authority, for year ended Mar. 31, 1950, states that the average revenue for each kilowatthour sold was 14.3 per cent above prewar average, rates in some sections were up more than 20 per cent, and further rate increases generally were in prospect.

[3] Hoover Report (June 30, 1947) reported this cost at $42,000,000,000. Higher construction costs (based on *Engineering News-Record* Index of Construction Costs) would raise this to $60,000,000,000 today. (This latter figure has been used by Bozell and Jacobs.)

[4] Jan., 1951, ECAP Survey.

of all electric power generated in the entire world. Russia, by comparison, uses only 9 per cent.[5]

There has never been a period of arrested growth in the history of the electric industry in this country except in the depression years of the early 1930's. Even then the declines were relatively slight. This is excellent evidence that the utilities were and are soundly conceived and have been and are efficiently managed and operated.

Electric light and power companies, since the war, have spent more money for expansion of their facilities than has any other industry in the country.[6] The billions which have been appropriated by the railroads and the oil industry, vast though they may be, have been dwarfed by the billions which have been spent by the electric power companies. And still more billions are budgeted to be spent over the next four years.

No Power Shortages

These vast sums are being spent by the privately-operated companies to meet the electric power demands of industry, business, and the public at large. The increase in demand has been forecast for the most part with such accuracy that at no time since the war has there been a shortage of electric power. Rather, reserves have been built up to a point where today it is possible to meet demands, with capacity to spare.

I sometimes wonder whether the description "privately owned," as applied to the companies in our industry under business management, is not a misnomer. If anything, our companies are "publicly" owned, in the broadest sense of the word. Not so very long ago considerable ado was made over the fact that the American Telephone and Telegraph Co. had secured its one millionth stockholder. Not one of our companies is so farflung in its operations as the AT&T. Yet, collectively, the electric power companies of the United States have an estimated three million stockholders.[7] This figures out to about one stockholder among every twelve residential customers throughout the length and breadth of the land.

Utility construction programs are progressing at a rapid rate to assure sufficient electric power to meet ever-rising demands.

A delaying factor, with which most of you are familiar, is the growing scarcity of essential materials, such as steel and copper. It is problematical how much the strict regulations and controls now in effect will limit the supply of materials to utility companies, but it does seem certain that cutbacks will be made.

Growing Scarcity of Materials

This is a matter of grave concern to utility managements. In the country as a whole, material shortages have already cut 1951 capacity additions by a million kilowatts, and now seem likely to cause a loss of from two to four million kilowatts in 1952.[8]

There is no gainsaying the fact that an adequate supply of electric power is essential to the success of this nation. Our military program, which has been superimposed on a substantial civilian economy, cannot succeed without electricity. It is the responsibility of the business-managed, taxpaying light and power companies to fulfill these needs, and we are confident of our ability to supply all future demands, if we are allocated the necessary tools and equipment to do the job.

Although I have said this many times before, the fact is worth repeating that one of the most conspicuous evidences of operating efficiency of electric utilities in Pennsylvania, and elsewhere in this country, has been in power interchange.

Emphasis on Power Pools

Great emphasis has been placed in recent years on "grid" systems and "power pools" formed by Federal agencies. Yet the simple truth of the matter is that power pools in this country owe their inception to the pioneering of business-managed electric utilities right here in this area. As a matter of record, Philadelphia Electric, Pennsylvania Power and Light, and Public Service Electric and Gas formed the first major system of interconnection in this country over a quarter of a century ago.

A new statewide Pennsylvania grid system now being planned will, on completion, constitute added insurance against power shortages in this important workshop state of Pennsylvania.

Widespread national publicity given to water power in recent years has created an entirely false idea of the importance of this source of electric power. You and I know that steam generation is the principal method used to produce electricity in America, and that hydropower accounts for less than one-third of the total—29 per cent, to be exact.[9]

The economical use of fuel to produce power is of much greater importance in the public utility business. Despite the fact that growing power needs have increased the amount of coal consumed many, many times, less coal per kilowatthour is required today than ever before.

For example, 20 years ago the industry used 1½ pounds of coal to generate a kilowatthour. Twenty years before that 4½ pounds were required. In 1892, the earliest year for which we have a record, it took eight pounds of coal to produce one kilowatthour of electricity. Today the national average is slightly less than 1¼ pounds. New generating units on order and being installed will be even more efficient, because they will use in the neighborhood of 2/3 of a pound of coal for each kilowatthour produced.

Economical Use of Fuel

This saving of fuel, which highlights efficiency of modern steam generating plants, is extremely important. It goes a long way towards offsetting today's higher operating costs and higher charges against income resulting from increased capital expenditures. A few years ago a kilowatt of generating capacity could be added for approximately $100 or even less. Now, even for the larger units, capacity costs are running more in the neighborhood of $160 to $177 per kilowatt.[10]

Such higher costs are typical. Today's dollar, on the average, buys only about 54 cents worth of food, housing, clothing, or other essentials, as compared with 1940. This figure varies considerably for each of these items, when taken separately. For example, when spent for food, the 1951 dollar has shrunk to 43 cents.[11]

If used for building a home, a 1951 dollar buys only 44 cents worth, compared with prewar prices. Clothing manufacturers find a dollar worth only 39 cents when buying woolens and worsted materials. Businesses using lumber find their dollars buy only 31 cents worth.

Similar shrinkages prevail for virtually all necessities of life except electricity. When spent for this essential, to-

(*Continued on page* 356)

[5] *Answers to 27 Questions*, EEI, 1950-51 Edition, p. 3. (1949 records, which are latest available.)

[6] Based on statement by L. V. Sutton, President, EEI, on Oct. 24, 1950, in connection with EEI power survey. Quoted in PIP *Factfinder* in Part B, Section VIII, p. 8 and 9.

[7] *Answers to 27 Questions*, EEI, 1950-51 Edition—3,000,000 stockholders (no allowance for ownership in more than one company).

EEI *Statistical Bulletin*, No. 18—37,532,549 residential customers.

[8] *Interim Electric Power Survey*, July, 1951.

[9] EEI *Statistical Bulletin*, No. 18, p. 21.

[10] *Electrical World*, Aug. 27, 1951, p. 99.

[11] U. S. Bureau of Labor Statistics. Indexes for 1940 and July, 1951.

The Job Ahead in Farm Electrification

By George M. Gadsby

President, Edison Electric Institute, and President, Utah Power & Light Company

An address before the National Farm Electrification Conference, Cincinnati, Ohio, October 9, 1951

GENTLEMEN of the Sixth National Farm Electrification Conference, it is indeed an opportunity and a pleasure to join in a conference of this character, having as its objective "raising farm living standards and reducing costs by increasing the profitable uses of electricity on farms."

My active participation in efforts leading to this objective began almost 30 years ago. In 1924, as chairman of a special power committee of the Pennsylvania Electric Association, I had considerable contact with Morris L. Cooke, who was heading a special commission appointed by Governor Gifford Pinchot to study and report on many phases of power development in Pennsylvania. While we did not see eye to eye as to the objectives of this commission and were constrained to oppose much of its legislative program, nonetheless, our joint activities in the field of rural electrification produced some very tangible results.

Bridging an Economic Gap

At that time farm utilization equipment consisted mostly of adaptations to farm uses of machines designed and built for industrial purposes, and one of the main problems was to bridge the economic gap between the cost of supplying service and the very limited use then being made of electricity on the farms supplied.

The following year, as president of the Association, I arranged a program in which rural electrification occupied a large and important part, with interest centered on the reports on a demonstration we had made the previous winter on a farm near Harrisburg, Pa., by equipping it with practically every electrical device then available. Great interest was shown in this demonstration and shortly thereafter, working with representatives of the Pennsylvania Utilities Commission, a rural extension program and more or less standard rate schedules were developed for the entire state.

We also were quite active in the work of the Committee on Relationship of Electricity to Agriculture, which, under the direction of Dr. E. A. White, consisted of members from the American Farm Bureau Federation, the National Grange, American Society of Agricultural Engineers, National Association of Farm Equipment Manufacturers, National Electric Light Association, American Home Economics Association, General Federation of Women's Clubs, manufacturers of individual electric light plants and the United States Departments of Agriculture, Commerce, and Interior. CREA accomplished a great deal in those formative days, operating through state committees in many of the important agricultural areas. My interest in rural electrification has been continuous since that time.

The possible use of electric energy for agricultural purposes was in the minds of the pioneers of electricity even before the beginning of this century, during the first half of which great progress has been made. It is redundant to say that before electricity can be used on the farm it must be taken to the farm. Taking electricity to the farms has required overcoming many engineering and financial difficulties, but today we can join in the pride of that accomplishment nearing completion. Please do not misunderstand this statement; there will always be construction work to be done reaching up to "the cabin at the head of the creek" and, more importantly, reconstruction and enlargement of the capacity of lines already built.

Endless Work for Electricity

The second phase of farm electrification, which consists of making electricity do more work on the farm, will never end so long as the great inventive genius of our American people remains active. If this be suppressed and progress comes to a halt, it will be for causes other than the vision and ability of the creative American boy and man.

Just as many of us here have had a part in the achievement already made, by the same token we will spend a great part of our remaining lives in moving the service of electricity to constantly higher levels. And as we move on we can be sure that among the farm boys and girls of today there are many who will pioneer or otherwise play a large part in discovering new ways to make electricity serve the farm, and together with many others they will transform their ideas into beneficial use.

We may all be glad that electric service has been brought to about 95 per cent of the presently occupied farms. By the end of the year we estimate it will be available to all but about 250,000 occupied farms. In only six states is service available to less than 85 per cent of the occupied farms.

In continental USA there are about 5,130,000 occupied farms as indicated by the 1950 census, now partially reported. By the end of 1951 it is estimated that 4,750,000 of these will be taking electric service and another 150,000 will have service available but not used. This leaves about 230,000 occupied farms, or less than 5 per cent, to which electric service will not be available at the year end.

REA Accomplishments

This great accomplishment could not have been achieved in the last quarter century had it not been for the loan of about one billion dollars for this purpose by the Federal government. More than half of the farms with electric service are on the distribution lines of the REA cooperatives, and nothing I say today will detract from the accomplishment of these cooperatives in taking electricity to so large a segment of rural America.

Over the past 50 years much engineering work has been done to develop power lines suited to rural needs, and continuing engineering progress will enable the power supply systems to keep up with growth in farm electrification, combining dependability and adequacy with feasible construction and operating costs. The engineers have been alert in adapting to farm lines the latest developments

in lightning protection and relay operation, so as to make fewer and shorter interruptions due to storms and other causes. The advent of mobile radio equipment has been particularly beneficial.

From experience and observation over many years I know how rural electric service has been improved by these technical staffs, and the manufacturers and utilities can be relied upon to keep on making improvements, both by invention and by increased service personnel among the electricity suppliers.

Adaptation and Development

As I have already noted, in the pioneering of farm electrification the adapting and developing of farm equipment and devices to enable electricity to do useful work on the farm was a job of first magnitude. Even now, with full credit to the great accomplishments of the able, industrious, and devoted workers on the farms, in the agricultural colleges, among the county agents, in the manufacturing establishments for farm and electrical equipment, and in the power companies, it must be recognized that only a start has been made compared to the work that remains to be done.

Electricity per se is of little or no use. It is purchased so that it may light lamps and drive, heat, or otherwise operate some machine or device that performs a useful function. Therefore, the record of growth of electric service in its manifold uses is a reflection of the invention, development, and acceptance of electric lamps, appliances, and machines, in the operation of which electricity plays a valuable and frequently indispensable part.

Record of Growth

Electricity first entered the home with the invention of a practical electric lamp suitable for installation in the house, and generating plants were built to supply service during the evening hours when light was wanted in the house. These early generating plants operated from dusk to midnight and then shut down the rest of the 24 hours. When the electric iron was invented and marketed, electricity was needed by the housewives in the daytime on Tuesday, which was ironing day. As vacuum cleaners, electrically driven washing machines, electric ranges, and refrigerators were invented and became low priced through mass production, the demand for electricity in the home increased greatly and spread over the 24 hours, seven days a week.

In like manner invention and market acceptance of lamps and other electric devices have caused the growth of electrification in commercial establishments and in industry.

So it has been and will be with respect to electrifying the farm. The invention, adaptation, and development of equipment and devices useful on the farm operated by electricity will build indefinitely the use of electricity in farming. In the future a larger potential market and increased buying power will offer bigger incentives for inventions and for adaptations to farming of new developments in other industries.

The simplest available measure of progress of electricity on the farm is the average annual kilowatthour use. Note that I do not say use on the average farm, for there is no average farm; different types of farms, at the current status of farm electrification, use widely different amounts of electricity.

Increasing Consumption

Study of consumption figures shows that the longer electric service has been on a given farm the more use is made of it. The new farm customer starts out with low consumption and increases usage as he is able to acquire appliances and equipment. The decrease in the number of minimum bills among REA co-ops will bear this out. Consumption figures also indicate that the amount of electricity used is affected by the type of farming and by the average farm income.

On the farms of the country as a whole, the principal use of electricity is still in the home with a relatively small amount used in farming operations. This does not hold in the case of dairy, stock feeding, and poultry farms, where pumping for irrigation and drainage is practiced, nor where our sales departments have worked in rural areas with the same zeal as in urban territory, but it does obtain for a majority of farms and is in sharp contrast to the widespread changes that have been affected in farming operations through the use of tractors and other mobile farm equipment.

Excluding California and Arizona, where there is irrigation pumping on a large scale, the average annual farm use increased two and one-half times from 1930 to 1950. At present it is approximately 2,500 kilowatthours and increasing at the rate of 7 per cent per annum, which is to a degree kept low by the continuing addition of many new farms. This is a healthy growth, but not as good as the present annual 8.5 per cent rate of increase for the average residential consumer.

Varied Usage in Different Localities

Usage varies greatly in different parts of the country. In the Northeast in 1950, the average farm used 55 per cent more electricity than the average residential user. In one state in that region the farm use was 70 per cent higher than the average residential use. Most of these farms have had electric service for a long time, and there is a goodly number of dairy and poultry farms using 10,000 to 50,000 kilowatthours per farm per year.

In the East North Central, West North Central, Rocky Mountain, and Pacific Northwest areas, average use in 1950 exceeded the residential use by about one-third. In the Southern States the average farm use was about 10 per cent below residential use. The progress of some localities affords promise for the future all over the United States.

About 25 years ago rural committees of the power industry set as their goal an average of 6,000 kilowatthours per annum, not just for the best farms but for all farms, and they expected to be serving three million farms by 1938. The average farm in Connecticut, Idaho, Oregon, and Washington is at or above the 5,000 kilowatthour per annum level, and several other states are climbing rapidly toward it. The occupied farms in these states are nearly 100 per cent served. These figures indicate that it will soon be time to set higher annual goals—say 10,000 kilowatthours—for the family-size farm which depends on the farm itself as the source of income. When that high mark is approached, we will raise our sights again.

Nondomestic Farm Uses

At present the principal nondomestic farm uses in order of average kilowatthour consumption are: heating water, lighting farm buildings, pumping water for stock, driving milk machines, cooling milk, space heating in brooders and pens, feed grinding, handling and drying feeds, and on an increasing number of farms, pumping for irrigation or drainage.

Judged by the standard of importance to the farmer, the list would probably be arranged as follows: lighting farm buildings, pumping water for livestock, milking, milk cooling, dairy barn and poultry house ventilation, livestock and poultry water warmers, grinding and mixing and handling feed, dairy barn cleaners, welding and other repair shop uses. Surveys of Iowa farms showed 15 to 20 per cent of the energy consumption is used for lighting farm buildings, and 5 to 10 per cent for pumping water for livestock.

A recent survey of a hundred dairy and poultry farms in Connecticut with an average annual use of about 24,000 kilowatthours showed per farm an average of 6-2/3 horsepower in electric motors, 14,000 watts of heating load, and 1,400 watts of farm lighting. The use for water heaters for house and farm buildings was 21 per cent of the total. The annual use was remarkably evenly distributed throughout each month of the year.

Electricity Meets Farm Needs

The first concern of the farmer is to boost the farm income, and his second is to reduce the amount of heavy labor required of the farm operator. Farm labor has become more and more an economic problem in America. The size of the farm family has dropped sharply in recent years, increasing still further the need of electricity to get work done without overcrowding the time and overtaxing the strength of the farmer himself.

This is an era of mass production in industry, and to maintain its position farming must strive to increase its earnings by the same process. Electrification of industry offers a guide as to what to expect in agriculture. In 1916 the average factory worker used 8/10 of a kilowatthour per man-hour, and in 1950 he used 6.29 kilowatthours per man-hour. In 34 years the kilowatthour use per man-hour in manufacturing had multiplied nearly eight times.

The average number of kilowatthours per man-hour used in farming operations is not available for direct comparison, but some idea of how big and how challenging is the farm electrification job ahead may be had from a chart in *Farm Implement News* of July 10, 1951. This chart showed that in the same 34 years during which the use of electricity per man-hour in manufacturing had multiplied about eight times, the product output per man-hour in agriculture has but doubled.

Of course, it is much easier to organize factory operations for the application of electric power than to supplement manpower in agriculture with electric power. We may safely draw the conclusion, however, that a very much larger use of electricity in farming operations may reasonably be expected, and that this greater use will be not so much for comfort as it will be aimed at increasing production, reducing costs, improving quality and marketability of produce, and reducing the risk of crop loss or of loss of crop value.

Conditioning Crops for Storage

Conditioning of farm crops such as hay, corn, and small grains for storage will improve quality, reduce losses, and increase labor efficiency. For example, continued rain in the Midwest during the current hay harvesting season made it impossible to harvest much of the hay without serious loss in quality. Professor Duffee of the University of Wisconsin stated that the Wisconsin grassland farming program was seriously affected by the recent difficult hay harvesting season. He anticipates that many farmers will reduce hay acreage and plant grain crops as a result of the past year's experience. Soil conservation programs depend on successful grassland farming. The wider adoption of mow hay curing methods and grass silage storage will eliminate much of the loss now suffered in forage crops. Electrically operated equipment for mow hay curing and silo filling and unloading are essential parts of a successful grassland program.

Reducing Losses in Corn Harvest

The Midwest corn crop for the current year has been seriously affected by unfavorable weather. A satisfactory crop may still be harvested, barring an early frost. If there be an early frost, much of the corn may be damaged, and in any event corn will probably be harvested with a higher than normal moisture content, making it difficult to crib for safe storage.

Research has demonstrated that much of the loss normally suffered in corn harvest can be reduced or eliminated if crop processing equipment be used. Corn can be picked and cribbed at least two weeks or more earlier than normal picking time. Picker losses, such as shelled corn dropped in the field by the picker and ears knocked from the stalks, are materially reduced. Corn can be cribbed at high moisture content, 25 to 30 per cent, and dried by crib driers electrically operated to safe moisture content of 18 to 20 per cent, for storage. In normal growing seasons, late maturing corn (corn requiring a longer growing season) can be safely planted if crop processing equipment is used. Late maturing corn has higher yields than earlier maturing corn, thus increasing the farmer's income.

New oat varieties of higher yield have been developed. Here again, crop drying equipment can materially reduce harvest losses. Fields of heavy grain that may blow down in rainy seasons may be harvested, dried, and safely stored.

Many other crops such as tobacco, peanuts, grass seed, etc., can be processed for storage or the farm market by electrically operated crop processing equipment.

Electricity can be used to a much greater extent for the preservation of perishable farm products such as meats, vegetables, and fruits, thus lengthening the marketing season and improving annual income.

More Irrigation

More irrigation to insure against crop loss, to maintain quality of produce, and to increase production may be expected.

The more heavily the farmer becomes involved in mass production, the greater becomes his dependence on machinery and the greater the necessity for fast and dependable repairs of such machinery. Electricity in repair shops is already helping in this respect, but will have much more to do as this need increases. The farm shop affords an opportunity for the farm boy to develop mechanical ability and self-reliance. In many cases the farm boy has developed new ideas that have been adopted by national manufacturers of farm machines and equipment.

Great increases in the farm use of electricity are to be expected as the outcome of discoveries, unthought of heretofore, of new farm products and new farm methods. It has been the experience of invention that an industry which is pressing to make progress along certain

directions will stumble upon discoveries in other directions. In other words, that industry which is pressing ahead for improvement is the one most likely to continue to make gains, and many of these gains will arise in totally unexpected quarters. For the past 30 years there has been a very substantial grist of farm research work going on in many parts of this country, some of which involves the use of electricity. Any of it may produce developments that will result in an expanded application of electricity.

The latest survey of the Edison Electric Institute of research projects to which electric utility companies are making some contribution has recently been published. It does not purport to cover all of the farm research work in the country, but it covers a substantial part of it. It reveals that a gratifying amount of this work is going forward, and it is being carried out in many different locations throughout the country, mostly in connection with state colleges. This is as it should be. Farming conditions vary considerably in the broad expanse of America, and practices must be found that are adapted to each locality. Assuming that there is a good exchange of information on research and development work, duplication need not be wasteful.

It must be remembered also that after results of investigations have been obtained, and better methods and equipment revealed, there still remains the big job of translating this knowledge into methods to be adopted by the farmers before the discoveries can be fully exploited.

Highlights of Research Study

Scanning our latest research survey, these are some of the highlights which I think will merit your interest:

The report covers some 88 separate and distinct projects. There are 244 investigations or special studies reported under the 88 separate projects. The survey includes reports from 30 of the 48 states and also from Canada. All of the projects were set up to attempt to solve some particular problem. Increasing farm income, saving labor, or improving the quantity and quality of farm projects are the targets.

In the category of increasing farm income, recent studies in Texas showed that during cold weather farmers using electrically heated water for dairy herds of 60 to 80 dairy cows, respectively, produced increases of 43 to 51 pounds of milk daily per herd, resulting in net daily increase in income of $2.67 to $3.21, after deducting the cost of heating the water electrically.

In the State of Washington, experiments proved that farm waste products, such as green bean and pea vines, could be dried with forced unheated air, converting the vines into hay equal in feed value for dairy cattle to good quality alfalfa hay.

In New York State, studies proved that electrically-operated dairy barn cleaners would eliminate most of the labor part of cleaning dairy barns and save, on the average, three-quarters of the time formerly required. Farmers also reported laborers on dairy farms are much better satisfied with the working conditions where dairy barn cleaners are used.

Experimental Electric Farm

In Wisconsin, the work continues on the experimental electric farm, as partially reported upon by Professor F. W. Duffee in a paper delivered at the Edison Electric Institute Convention in Denver last June, on the extensive study to cut chore time in half. In factories production layouts are carefully engineered for greatest efficiency of the manufacturing process—why not the same for the placement of farm buildings and their internal layout to perform the functions they are designed for? Professor Duffee's idea makes good sense and he has already made substantial progress in proving his contention.

Studies intended to improve the quality of grains and hay are in progress in California, Connecticut, Indiana, Louisiana, Maine, Massachusetts, Michigan, New York, North Carolina, Ohio, Oregon, Pennsylvania, Texas, Vermont, and West Virginia. The basic research and investigational studies conducted in the various regions represented by these states are setting the pattern for more economical processing of farm grains and forage crops for sale or storage on the farm. From these specific studies the manufacturers of crop drying and processing equipment are developing the commercial units.

In a similar manner, studies in electrically-operated land drainage equipment were reported in progress in British Columbia, Idaho, Michigan, Minnesota, Ohio, and Utah. The basic concept of these studies was to develop more effective irrigation and drainage equipment and to study the effect of these practices on soil management.

In Louisiana, Michigan, Oregon, Pennsylvania, and Texas, studies of operating costs, construction, and design of farm freezers are in progress. Information has also been collected on the kind and quality of products stored, extent of use of locker plant facilities, mechanical performance of equipment, quality of products removed, and other operating characteristics. From these basic studies should come recommendations for improvements in farm freezers.

Electrical equipment and services are helping to take some of the gamble out of agricultural production. For example, frost damage to fruit crops is a constant worry to farmers in Washington and California. Tests made in Washington indicate that electrically-operated propeller fans have reduced frost damage.

For the past 25 years the European corn borer has been slowly spreading over the United States, causing increasing damage to one of agriculture's most important crops. While electrically-operated equipment may not be the final answer to the control of this pest, studies are under way in Maine, Massachusetts, Pennsylvania, and Indiana on the use of electric lights and traps as a means of studying moth flights and as a possible method of exterminating them.

Farm Shop Equipment

In Idaho, studies have been made to determine the electrically-operated equipment best suited for the farm shop. It is interesting to note that the connected load in 20 shops visited was found to be between 8 and 10 hp. Each of the shops was equipped with an electric welder. While the farm shop load was not a large one from the electrical standpoint, due to the high diversity in the use of the equipment, the importance of the farm shop was emphasized because of its function in keeping farm machinery in operation.

In Idaho also, a study was made of the hazards involved in the use of infrared heat lamps. The importance of the heat lamp as an aid for brooding pigs, chickens, and lambs is emphasized in the research report. The alarm of the insurance companies caused by growing

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Material Shortages Slow Industry Expansion, Power Survey Shows

REPORTS of a marked slowing down of the gigantic construction program of the electric power industry because of shortages of copper, steel, and steel alloys have been confirmed in a statement by EEI President George M. Gadsby, summarizing the recently completed Power Survey of the Edison Electric Institute.

Estimated increases in power demands for the next three years showed little change, however, from the increases indicated by the previous survey of last April, Mr. Gadsby explained.

Conducted by Power Survey Committee

The semiannual survey, tenth in a postwar series, was conducted by the Institute's Electric Power Survey Committee, headed by Walker L. Cisler, Executive Vice President of The Detroit Edison Co., and was participated in by more than 100 engineers, power experts from electric systems throughout the country, together with the representatives of the nation's principal manufacturers of electric power equipment. The scope of the survey included the nation's energy requirements and capabilities, and manufacturing status of power equipment.

According to the new survey, there will be practically no change in the previously estimated peak load for 1951, but the estimated peak for 1952 was raised about 2 per cent and for both 1953 and 1954, about 3 per cent.

On a nationwide basis, the survey indicates a margin of generating capacity for 1951 of approximately 8 per cent. All regions of the country will have some margin in December of this year except the Western Division of the Pacific Northwest and parts of the Southeast, where severe drought up to the present has cut down the output of hydroelectric plants.

Effects of Shortages

The survey of manufacturing and construction schedules, however, indicated that because of lack of materials, up to four million kilowatts of new generating capacity scheduled for service by the end of 1952 will not have been completed unless more steel and copper become available for equipment and plant construction. This amounts to nearly half the new capacity scheduled to be added in 1952. The survey also indicated that the slippage from the construction schedule could amount to a cumulative total of seven million kilowatts of generating capacity by the end of 1953. These estimates are based, in part, upon the time already lost in the manufacturing of certain major equipment and upon problems now being encountered in obtaining steel for plant construction.

If these materials cannot be obtained, margins for 1952 would be cut as low as 3 per cent from the expected 12 per cent reported in the April survey, and in 1953 would be cut to 5 per cent from the expected 16 per cent. In some regions, margins would be below even these low averages.

In the light of the estimated power demands for the next three years, such cuts in margins would be a matter of grave concern, Mr. Gadsby said.

The power industry, the Institute's spokesman pointed out, has had underway since World War II a construction program designed to meet the foreseeable growth of power requirements with an adequate margin. With the outbreak of the Korean War, this program was promptly stepped up to provide for expected defense production needs.

Realizing the vital contribution of electric power to America's productive might, the power industry has vigorously prosecuted its huge expansion program, unmatched in industrial history, by raising its total generating capacity of 50 million kilowatts at the end of World War II to 75 million kilowatts at the end of this year and by taking steps to add 26 million kilowatts over the next three years.

Adequacy of Program Confirmed

The latest survey confirms the adequacy of the stepped-up construction program and establishes the fact that if materials are forthcoming, it would provide all regions of the country with a good margin with one exception. That exception is the Western Division of the Pacific Northwest where concentration of aluminum production and the longer time required to build large government hydro projects would delay attainment of a reasonably adequate margin until 1955.

Commenting further on the power situation, Mr. Gadsby emphasized that the new power plants in the industry's construction program consist largely of those that can be completed in the shortest possible time and that they have been located by experienced power engineers where they will best serve the growing power demands.

Paying a tribute to the manufacturers

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The Electric Power Survey Committee pictured during a recent meeting at EEI Headquarters. Committee Chairman Walker L. Cisler, Executive Vice President and Director, The Detroit Edison Co., is standing at right with hand on chair.

Solutions to Critical Shortage of Engineers Sought at National Engineering Manpower Convocation

STRESSING the critical shortage of engineers which confronts the nation at a time when civilian and military needs are most urgent, speakers at the National Engineering Manpower Convocation, held at the University of Pittsburgh, Pittsburgh, Pa., on September 28, reviewed the situation and suggested means of counteracting it.

The Convocation was sponsored by the Engineering Manpower Commission of the Engineers Joint Council, with the cooperation of the Engineers Society of Western Pennsylvania. G. A. Shoemaker, President of the latter organization, served as chairman.

The objectives of the Commission are "to aid in establishing the importance of the engineering profession to the national economy; to aid in maintaining the supply of trained engineers; and to promote the most effective utilization of engineers in the national health, safety and interest."

"Grass Roots" Program

Of the total of 95,000 engineers required by industry, government, and the military by June, 1951, only a class of 38,000 was available to meet this need. Educators from the secondary and college level, as well as industrialists and engineers, comprising an audience of approximately 500, heard the speakers advocate a "grass roots" program aimed to impress the general public with the vital importance of creating and maintaining an adequate supply of engineers. Engineering delegates from areas throughout the country will serve as representatives of the Commission in carrying out this objective on the local level.

Four speakers contributed their views on different aspects of the theme, "Engineering—Its Future." They were: A. C. Monteith, Vice President in charge of Engineering, Westinghouse Electric Co.; S. C. Hollister, Dean of the College of Engineering, Cornell University; M. H. Trytten, Director, Office of Scientific Personnel, National Research Council; C. H. Brown, Manager of Engineering and Manufacturing Services, Kodak Park Works, Eastman Kodak Co.

"More progress has been made in technological achievements in the past 50 years than in the previous 5,000 years," asserted Mr. Monteith in his talk, "Reflected Light Is Not Enough." Engineers are needed to preserve and improve our high standard of living, to solve the problem of our depleted natural resources, and to defend us against aggression.

Protecting Our Supply of Engineers

He censured the hue and cry raised at the proposal to make some provision for protecting our supply of engineers by exempting potential and graduate engineers from the draft. Such objections, he said, are based on an emotional appraisal of the equality of rights and duties in a democracy, rather than a realistic evaluation of the country's needs. Unless the United States can present a strong defense through superior technology, it may be overwhelmed by superior numbers.

The unfortunate effect which resulted from the World War II policy of drafting all able-bodied men from engineering schools, a policy which no other major world power followed, was discussed by Dean Hollister under the title, "Resources—Present and Future." In addition to the below-normal rate of graduating engineers, the freshman enrollment in engineering classes has dropped about 20 per cent from its prewar level. If, at the present time, engineering students were to be drafted or called into the reserves, this would aggravate the shortage all the more.

Measures to Alleviate the Shortage

Careful conservation by industry of its present supply of engineers, the full utilization of the abilities of trained engineers on the part of both industry and the armed forces, and the establishment of a system whereby engineers in essential civilian positions may be deferred and draftees and reserve personnel may be given assignments compatible with their qualifications, would tend to alleviate the shortage, Dean Hollister suggested.

The present flow of young men into the armed forces will not be sufficient for a long-drawn-out defense effort unless the term of service is extended, Dr. Trytten stated in his address on "Government Agencies and Policies." A three-year hiatus caused by military service, however, would be fatal to the development of technological men. Dr. Trytten, whose experience with manpower problems includes service as general chairman of the selective service committees advisory to General Hershey, and as consultant to the Department of the Army General Staff, also pointed up the necessity of clarifying the relative importance of fighting men at the front and those who support them, civilian and military, behind the battle lines.

Strenuous efforts must be made to recruit high school students for enrollment in engineering schools, according to Mr. Brown's "Program for the Engineering Profession." The Engineering Manpower Commission has attempted to correct the erroneous information which has circulated in recent years, concerning an oversupply of engineers. Charts and data of the Department of Labor were revised, and accurate information was distributed to educators throughout the country. Results of a survey of engineering needs were also released by the Commission.

A Two-Fold Challenge

"Beyond the necessity for technological preparedness in the military sense," concluded Mr. Brown, "the engineering profession is faced with the challenge of increasing the productivity of industry and improving the material standard of living. Either in itself constitutes a ringing challenge, but when the two are superimposed the necessity for aggressive attack upon the problem becomes even greater. . . . The wreck of our civil economy would be as disastrous as military defeat. Maintenance of strength in our civil structure as well as in our military establishment is essential. In both, the role of the engineer is a dominant one, supply of engineering manpower is a critical problem, the failure to make full utilization of available engineering skills is a wasteful procedure which must be eliminated."

Water Policy as the Engineers See It

By Abel Wolman

Professor of Sanitary Engineering, Johns Hopkins University

A paper presented on May 2, 1951, at the Annual Conference of the American Water Works Association, Miami, Fla.

I HAVE a somewhat disagreeable task to perform, certainly one which an engineer does not ordinarily undertake without a great deal of misgiving. I plan to depart somewhat from the strictly factual engineering features of national water policy and move into an area largely dominated by considerations of social philosophy. That I do so with a great deal of misgiving is, first, because it is not too familiar a field and, second, because it lends itself so easily to recrimination and to attack.

It is necessary to undertake the task, however, because, after long interest and experience in the field of water policy, I feel that we have moved somewhat beyond matters of engineering decision and must confront ourselves with problems of social philosophy. As General Chittenden of the United States Army pointed out many years ago, in discussing the problems of the Mississippi Valley, the greatest and most troublesome issues are not those calling for engineering decisions and diagnoses, but those created by the attitudes of man.

For the Common Good

I want here, too, to add a disclaimer for myself. After having spoken on this topic in many areas of this country over a period of almost 20 years, I find such a disclaimer necessary. Whenever such criticisms as I feel I must make here are presented, friends of mine want to know what has happened to me. The interpretations I hear from friends and enemies are various, but all wonder what has happened to Abel Wolman: Is he against the "common good?" Thus I make this disclaimer because I want to assure everyone that I am "for" the common good, although I find that there are many ways of approaching it—some of which I find desirable and others of which I think are full of danger.

Whatever my comments here, they are not the result of having been disappointed in love—one of the additional diagnoses on the part of my more benevolent friends. That will not account for it. I may, of course, have hardening of the arteries, which others, perhaps less benevolent, have associated with their diagnosis.

The author began his career in 1914 with the U. S. Public Health Service as an assistant engineer, later serving as chief engineer of the Maryland State Department of Health from 1922 to 1939. He has acted as sanitary engineering consultant to national industrial organizations, and also as editor of various publications related to his field. As a lecturer and professor of sanitary engineering, Mr. Wolman has been associated with Harvard, Princeton, and other universities and colleges throughout the country.

In passing, I might also say that I am not against federalism. I recognize—and have recognized all my life—that there not only is a place for Federal action, for stimulation, for integration on the part of a Federal government of a great country such as ours, but a major necessity for it. And those comments I shall make upon increasing federalism are made within the framework of an understanding and acceptance that there is an important opportunity, necessity, and responsibility for Federal government.

I want to add two more observations: first, I have learned not to pick out scapegoats in the problem of national water policy. It is very easy to say that the difficulties we are in are the fault of the Bureau of Reclamation, the Corps of Engineers, the Federal Power Commission, or the like. I think that is a shallow diagnosis. Those agencies are literally agents, or even victims, of national legislation. I want to pin the responsibility for the kind of difficulty in which we do find ourselves where I believe it belongs. It belongs on Congress, and, in turn, it belongs, of course, on every man and woman in this country. It is undesirable as well as inaccurate to use the easier route of charging agencies that have been created for certain purposes, frequently competitive, with the responsibility for leading us into a disorderly set of circumstances.

The scapegoat is neither the Democratic nor the Republican party. Those of you who are on the side of either of these political philosophies can take no great cheer in the fact that "if the Republicans had been in" or "if the Democrats had been in," there would have been no problem in national water policy. That, I think, is even shallower bunk than the original diagnosis. Need I recall to you the fact that the Rivers and Harbors Bill of the last session of Congress was almost unanimously approved by both parties with only six dissenting votes in the entire two houses? No, there is no solace in the feeling that, if one party or the other had been in power, those situations would have been resolved with the greatest of ease. It isn't true.

Spending in Water Resources Field

Now let me come to the factual situation. Prior to 1947, in a period of approximately 150 years of our national history, we spent less money in the water resources field in this country than in the period—as yet, not quite four years—since 1947. Although I am accustomed now to speaking in terms of expenditures which are quite unfamiliar, if not unintelligible to me in a personal sense—that is, in ten to the eighth or ten to the ninth power dollars—one of the difficulties in viewing the national water policy scene is that it is so great, that it is so complex, and that it is so expansive in geography as well as in dollars that it becomes a challenge to any single individual or group of individuals to evaluate and to appraise, and to be able to distinguish between the relative good and bad.

What about orderliness in the development of a national water program? That's a good, homely Anglo-Saxon term, which I like. But it is not found in the national water resources development program. Engineers are taught to have a sense of orderliness; they like to see "the data." They are even accused

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of being so quantitative that they become nonhuman. I do not think the accusation is fair. They should be quantitative; as a matter of fact, they're the last surviving quantitative "Indians" in this country. And it would be even a greater calamity if their quantitative evaluations and diagnoses and appraisals were to go by the board because of the charge that they are either antisocial or antihuman.

Orderliness Is Essential

"Orderliness" is the survival of a technique which is highly essential to our purposes. The President's Water Resources Policy Commission made a very interesting comment on this just last year: "There is today no single uniform Federal policy covering comprehensive development of water and land resources." Consider that statement in light of the fact that 40 years ago President Theodore Roosevelt said that he knew of no more distinguished mismanagement in the history of our nation than the mismanagement of rivers. That was in 1909, and it has been stated in messages by every president of this country since that time, Republican and Democrat alike.

That would seem to indicate that we are in a kind of social dilemma, a kind of social morass, from which it seems difficult for us to escape; and I find, incidentally, that the Water Resources Policy Commission itself had difficulty in escaping in some important considerations which I hope to enumerate.

Acceleration of Federal Expenditures

Why do we get so excited about this —aside, of course, from the ten to the ninth power potential dollar expenditures? There are other reasons. Since 1934 there has been a tremendous acceleration of Federal expenditure in the water resources development field. The acceleration took place in a period of recurring stresses, recurring dilemmas, which were not associated so much with water resources development as with economic stress and catastrophe. The period from 1934 to 1942 was perhaps the worst period in which to make major national decisions, yet most of the fundamental ones in water resources development were made in that period of stress and high emotion.

Thus, I might say that my present position is a reaffirmation of my position in 1936, when I appeared personally before the President of the United States and attempted to have him resist the flood control resolution which, for the first time, abandoned the concept of major financial contribution by local areas. I felt, then, as a member of the National Water Resources Committee, that it was a great mistake which would lead to extravagant expenditure. And it has.

The national expenditure in flood control operation since that time has gone up almost a hundredfold. I associate much of that rise, not with the increasing damage due to floods, but with a change in social attitude coming out of a period of high emotion. I wish that we had not had high floods in the late 1930's and that we had not had the maximum droughts during the same period of economic depression; it would have saved us billions of dollars for the future, and, of course, we would have hung on longer to what I feel is a necessary prerequisite to careful expenditure—that is, local responsibility for reimbursement.

Grant-in-Aid Philosophy

Flood and drought in that period also brought into play the grant-in-aid philosophy, to my mind—and I know this comment will cause many of my friends either to walk out of the room or write me off as a decrepit conservative—one of the great influences toward hasty expenditures in national operations today. The grant-in-aid principle has many merits. Its demerits arise from misapplication, abuse, and unnecessary extension.

The Reconstruction Finance Corporation provides an example of abuse of a sound principle. It was also born out of depression philosophy and had a purpose at that time. As Herbert Hoover said in his recent testimony on RFC, it is difficult to understand its purpose in what I would describe as the present age of fiscal "vitamins," where we have nothing approaching a depression, where we have an excess of money, where we have sources of cash that seem so extensive they are hard to stem. What is the purpose now of using a philosophy that came out of 1933 and 1934?

I want to rehearse for those of you who didn't read former President Hoover's testimony what this system of easy money on a Federal basis has led to in the RFC. Then I want to go to the opposite extreme and see what it is leading to in such a group as the U. S. Chamber of Commerce, to give you the other side of the picture. The latter social philosophers are falling into the same trouble, because they do not want to see the band wagon go by without having industry, too, get on it.

Mr. Hoover presented an analysis of where some RFC loans went—loans that came out of your pocket and out of mine. There were 39 loans for hotels. Just what total social public service that supplied I don't know. My own feeling is that if I want to engage in operating a hotel, I want to know which hotel it is and where my money is going for it. I was not consulted; I merely found myself in the hotel business, through my income tax.

Abuse of Federal Loans

Fourteen of these loans—and, incidentally, not the $10,000 ones but those in the millions—went to hard and soft drink manufacturers. That's an amazing place to inject Federal stimulation.

Eighteen loans went to theaters and bowling alleys. Now, I am an advocate of the arts. I'm in favor of theaters—not so much of bowling alleys, as I'm an inferior bowler—but again I feel I should exercise my selection in a strictly personal, direct fashion. I want to know which bowling alley I'm subsidizing. I don't want it done for me without my knowledge.

In addition, we had a series of loans —and this I know must have been very appealing to the women taxpayers—to beauty parlors out of Federal money. To me this is an astonishing degradation, not from the viewpoint of morals and ethics, because that's very subtle, but a degradation in public policy. Women, however, need not be too upset, as we had a parallel set of loans to poolrooms, not concealed as any other type of public service—just poolrooms. I guess their social value comes under recreation and wildlife.

Now, I've kept for last a single loan. Its amount was large, incidentally, and it may have had as its purpose certain medicinal values. The RFC made a loan to a snake farm. Perhaps I should not have jumped to the conclusion it was for medicinal purposes; it may have been a religious matter. But why on earth that 1932 institution, which did a marvelous, a valid, and a necessary job when it was organized, should be so abused, it is difficult to say.

Industry on the Band Wagon

Turn, now, to the Chamber of Commerce. In its policies of 1951, under the heading of "Water Resources Development," it cannot resist pointing out that, if the Federal government gives loans and grants-in-aid to municipalities for stream pollution abatement, it should also provide that income tax deductions

be made available to private industry for stream pollution abatement work. There's nothing wrong in that philosophy, but how far does everybody want to go? Is there anything that should remain either for local responsibility or payment or for private initiative and payment when all kinds of people whittle it away?

Now, what are the issues in the water resources field? They include: What kind of Federal participation should there be in this field? (That's a simple question, but very difficult to answer.) How do you appraise the validity of an enterprise? How do you choose between water enterprises and, more important, how do you choose between a water enterprise and any other of a dozen kinds of functions in this country? How does the water enterprise rate against a hospital or a school or a public highway? That's the problem.

What is the wisdom of the existing and proposed legislation? I have already referred to the fact that we have a competitive set of situations. What should we do about that—how do we determine feasibility?

The Engineers Joint Council created a panel at the request of the President's commission, in January, 1950. It summoned the advice of about 80 U. S. engineers of all types of experience, and it posed these questions to them in general terms. The report was filed with the President's commission. It was long and to most people dull, and perhaps no one had time to read it, but I want to call to your attention just three principles that the Engineers Joint Council commented on—three fundamental principles. The council felt that in most undertakings one should insist upon local responsibility and local autonomy as far as possible. Everybody is aware you cannot do it completely; everybody is aware that, as the jobs increase in size and complexity, they become further and further away from local understanding and responsibility.

Quantitative Appraisal

The council came out, secondly, for the fundamental principle of quantitative appraisal. That is a very unpopular thing. I am confronted all the time by the Bismarckian phrase that, although this project shows itself to be pretty low in visible benefits from an engineering standpoint, you ought to build it because it's for the common good. I have seen that deterioration running all through the fabric of our appraisal.

The Engineers Joint Council thinks we ought to get back, even if we eventually throw it in the wastepaper basket, to an appraisal sheet, a quantitative relation between costs and benefits. In a period of less than 20 years the ratio of benefit to cost has dwindled to minus two. There was a time, of course, when no Corps of Engineers' project came in without such an evaluation. And as a general round figure, a project would have to have a ratio of benefit to cost of 2 to 1 before it would be recommended. I have seen that disappear. The ratios first dropped to 1 to 1, and then below. I recall the first time a project was presented that had a benefit-to-cost ratio of 0.5 to 1. I was still chairman of the Water Resources Committee and I said, "How do you get this way?" "Well, we recommend this because of imponderables."

Isolate the "Imponderables"

Now "imponderables" means all those things you cannot evaluate. There are a lot of imponderables, and, before I am attacked, there are many good reasons for doing things that do not quite reach a satisfactory ratio of benefits to costs. But, I say, isolate them; put them down in another column. Let's see what they look like; let's see what "national defense" means. All kinds of things come in under the label of "national defense" —that's another difficult problem to evaluate, and I'm not the person to do it. But I like to see on the right-hand side and on the left-hand side what it costs to build concrete structures. That we still know how to do, and I think we ought to continue to do it.

The council report had a third axiom which I think is worth repeating time and time and time again. There is a limited amount of money available for projects. It's astonishing to say that there are self-limiting amounts of money even in a great country such as ours, which is the richest and, I might add, the most blessed country I know. Even here there's a limit to the availability of money. The council felt it necessary to point out that that axiom was wiped out by some kinds of social philosophy. I do not care whether it is money or wampum or what medium of exchange, it is still necessary to pay something for what we buy. It might be nicer if we didn't have to, but even Uncle Sam has to get the money from us when he spends.

At this point, I want to review the list of people who participated in the public water supply and stream pollution abatement work. They were J. H. Allen, M. B. Cunningham, J. C. Frye, R. E. Lawrence, F. W. Mohlman, S. T. Powell, A. M. Rawn and A. D. Weston. Louis R. Howson is the chairman and L. H. Enslow, the coordinator. They came out flatfootedly for local repayment; they came out flatfootedly for preserving the responsibility where it has always been and where it is most likely to produce the greatest safeguard against wasteful expenditure.

Returning to the President's Water Resources Policy Commission document, I understand that I am one of the two people who have read Volume I. It is not a competitor of *Forever Amber*. It's an exciting document, but not bedtime reading in the same sense as some other volumes I know. In turning to the document, however, I want to report reactions which are not only my own but those of the nine subcommittees of the Engineers Joint Council. They have reviewed that document in detail. They have picked out paragraph after paragraph, and have made their comments, good and bad, straight down the line, on all of the functional features. That documentation will not be published, but will be available if and when the Congress views proposed legislation.

What are the findings? One thing they find—the book has some 770 pages —is a sharp contrast between the enunciation of the principles and the implementation of the policy that should follow from the principles. That is a general comment, a rather severe comment which probably stems from the fact that the volume is large and the subject complex. Possibly the document may have been assembled by a variety of people so that consecutive page statements are not in complete accord with a prior statement of principle. There are a number of such inconsistencies.

Inconsistent Proposals

A second criticism is that they find it difficult to follow the reasoning which perpetuates a bad policy for one function, such as irrigation, and recommends the correction of a similar bad policy in another function, such as navigation. The general reader and, I rather suspect, the congressman, will find it difficult to determine why it is so obvious that, in irrigation, it's all right to waive interest but in navigation, in which both principle and interest have always been waived, it is not and we should now see to it that, by a toll system, we get both principle and interest back. Because irrigation has grown up since 1902, it

did not appear to the council that subsidy should be perpetuated indefinitely, particularly in view of the fact that in irigation undertakings repayment has been consistently whittled down for a period of half a century until, within the next ten years, it may reach the vanishing point.

Such proposals are inconsistent with the sound statement in the same report, that "A subsidy always results in private gain at public expense." It is difficult to understand why an Eastern farmer must buy his farm, at his own expense, on a mortgage loan to be repaid in full with interest, while a farmer in another part of the United States may now be subsidized almost 100 per cent on his water supply.

Disputed Issue

What is the basis of that philosophy except the desire to develop the country?—a desire we find getting more and more tenuous. I might say, here, too, there is a sharp difference of opinion, which I think ought to be resolved on the factual grounds of whether we need any more agricultural land. The commission finds that we do need more land. The expert panel on EJC finds we do not. It ought to be possible to resolve that issue.

The council also made population estimates and they checked fairly well with the commission's. The council made detailed inventories on available lands in this country and the opportunities for export, and arrived at the fact that we do not need to open up such vast tracts of land, particularly against an increasing per-acre cost.

Some now propose to develop land at a cost of $1,000, $1,500, or $2,000 an acre when no amount of mental gymnastics will disclose that it will have a final value of more than $300 an acre after the water has been made available. For whose common good is that? Such enterprises run, incidentally, not into millions, but into hundreds of millions of dollars in cost.

We find a sharp inconsistency in the statements in the President's commission document suggesting the necessity of preserving local responsibility and then suggesting basin structures which are so largely dominated by Federal personnel, and by a chairman appointed by the President of the United States. Only in language has that preservation of local responsibility been assured, whereas in fact it would be practically nonexistent.

The commission pays only lip service to quantitative estimating of costs and benefits. It handles that objective in principle with such clearness that nobody can take issue with it, but later on, in effect, it says "We don't mean positively" when it states: "The principle of full reimbursement has ceased to be useful or necessary." We find the statements quite inconsistent. Later on, the commission says that, after all is said and done, when you have made the evaluations, the decisions on any project should rest on social good.

If decision rests on as general a concept as social good, any project qualifies, because any project has some values to somebody. The number may be small, the unit cost high, but they certainly have some value. The impact of the socially desirable and the imponderable unfortunately runs through the reports so extensively that it vitiates to no inconsiderable extent many affirmations of sound principles.

The commission recommends Federal pollution abatement loans to local subdivisions of government at 2 per cent Such loans are provided for in the existing stream pollution abatement act. Why we need Federal loans for pollution abatement is beyond me. The country has lots of money, and, incidentally, I might say, many states and many municipalities have a better budget balance than the Federal government. We have the ridiculous situation of a state, not far from my own, which asked the Federal government for a grant of $75,000 for a design for a building. It has an annual budget of $175,000,000 and a surplus. Why does it go to Washington? When it was informed that when it built the building it would have to reimburse the $75,000, it withdrew the request. That's not poverty—that's a degradation of state and local responsibility. It's a sad example, which can be multiplied many times.

The President's commission recommended certain important adjustments in legislation. The legislative proposals have not been published. Why, I do not know. If we are not able to see them now, perhaps we will never be able to see them in their original form. They are going through the various Federal agencies for adjustment and revision. Whether a composite piece of legislation, possibly bearing little resemblance to the commission's recommendations, will result, we do not know. The commission's proposed legislation in its original form should be made available for study.

Material Shortages Slow Electric Industry Expansion

(*Continued from page* 345)

of electrical equipment, Mr. Gadsby said they had met with vigor, skill and understanding the complexities of the great expansion program. While greatly increasing their capacity, at the same time, he said, they have improved the efficiency and reliability of their products.

Experience has indicated the desirability of keeping generating capacity about 15 per cent ahead of known power demand. Prior to the outbreak of the Korean War the industry had a 14 per cent margin to provide for unanticipated loads, for equipment out of service on maintenance schedules, for mechanical failures, and for other operating contingencies.

Only the problem of critical materials stands in the way of meeting the nation's demand for electric power. The industry can be counted upon to exert its utmost endeavor in cooperation with the national defense agencies to keep as closely as possible to its construction schedules and the preservation of an adequate operating margin, Mr. Gadsby concluded.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (TITLE 39, U. S. CODE, SECTION 233).

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4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowlege and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

WILGAR COLEMAN,
Editor.

Sworn to and subscribed before me this 1st day of October, 1951.

(Seal) MARY L. COONEY,
Notary Public, State of New York
(My commission expires March 30, 1953)

New Contest and Liberalized Rules Invite Wider Competition for Annual Prize Awards

TO recognize and encourage meritorious service and outstanding accomplishments within the electric industry, nine Annual Prize Awards are being offered this year through the Edison Electric Institute to electric companies and their employees.

In order to stimulate even wider participation in these competitions, the conditions of several of the contests have been liberalized to attract a larger proportion of entries from small and medium-sized companies. Hotpoint, Inc., has divided the George A. Hughes Awards into two classifications, one for large companies and one for small, and entries in each will be judged separately. The Laura McCall and Reddy Kilowatt Awards have also been revised to give smaller companies greater opportunity to win.

Important New Field of Competition

In addition, an important new field of competition has been created this year by the introduction of the George Westinghouse Awards, established by Westinghouse Electric Corp., to acknowledge and stimulate outstanding performances in the promotion of electric laundry equipment.

This year's Annual Prize Awards, comprising 41 individual prizes, will be presented either at the Eighteenth Annual EEI Sales Conference, to be held in Chicago, Ill., on April 1 to 3, 1952, or the Twentieth Annual EEI Convention, to be held in Cleveland, Ohio, on June 2 to 5, 1952.

Mandatory Size of Entries

It is now mandatory in all contests, except the Coffin Award and the Reddy Kilowatt Annual Report Award, that the size of entries be limited to 15 by 18 inches. This requirement not only facilitates handling and judging but also gives equality to all entrants, regardless of company size. Additional information on the rules governing the prize awards, described briefly further on in this article, may be obtained upon request to the Edison Electric Institute, 420 Lexington Avenue, New York 17, New York.

With the exception of the Coffin Award, which is administered separately by the Charles A. Coffin Award Committee, all of the awards are presented under the jurisdiction of the EEI Prize Awards Committee, directed by Chairman George E. Whitwell, Vice President of the Philadelphia Electric Co.

Charles A. Coffin Award

Considered the industry's most coveted honor, the Coffin Award was established in 1921 by General Electric Co. for annual presentation to the electric company making "the greatest advancement in its operation and physical plant, thereby making a distinguished contribution to the development of electric light and power for the convenience of the public and the benefit of the industry."

Under the new contest rules adopted in 1948, five companies are asked to compete for the award upon invitation of the Institute President. These five companies are selected from electric utility companies throughout the nation by means of a screening process which employs a Nominating Committee, consisting of 19 EEI committee chairmen and 15 members-at-large, and a Review Committee, comprised of three members chosen by the President of the Institute. The winning contestant is then named from the five companies by a three-man committee of judges.

Consisting of a gold medal for the winning company and $1,000 for the company's employee benefit fund, the Coffin Award may be given for important advance in any phase of electric operations. Companies will be nominated to participate in the competition on the basis of specific accomplishments, which will be cited in the invitations issued by the Institute President. A company may, however, base its presentation to the Coffin Award Committee on some other accomplishment which the company considers more significant.

As in previous years, the Coffin Award will be presented to the winning company at the Institute's Annual Convention.

George Westinghouse Awards

This year marks the appearance of the George Westinghouse Awards, which have been created to recognize and stimulate outstanding performances in the promotion of electric laundry equipment by electric light and power companies. Presented through the Institute by the Westinghouse Electric Corp., the awards will consist of $800 in cash prizes, along with suitably engraved trophies and plaques.

The competition, which is open to any operating electric light and power company and its employees in the United States and Canada, will award prizes in two classifications: automatic electric washers and automatic electric clothes dryers. Contestants should specify the classification they are entering and include in their presentations proofs of advertisements, samples of literature, and photos of window and floor displays. Sales accomplishments should be listed

and promotional activities fully described.

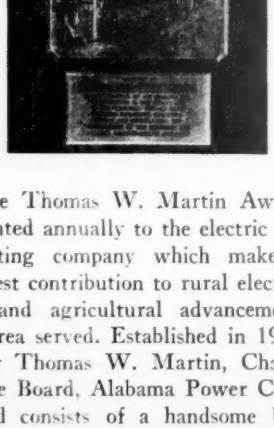
In each classification, the first prize consists of a trophy for the company plus $250 for the winning individual or group, and the second prize, a plaque for the company plus $150 for the winning individual or group.

In the automatic washers classification, the decisions of the judges will be based upon promotional programs aimed at increasing the sale of automatic washers; all forms of advertising and publicity; participation of utility home economists in utility and dealer pre-sale group demonstrations; post-sale demonstrations as an aid to satisfying users; and other outstanding educational or promotional activities.

In addition to the above considerations, as applied to electric clothes dryers, entries in the second classification will be judged upon advertising and publicity directed toward building a preference for electric clothes drying; dealer cooperative programs aimed at creating rapid acceptance of this technique; and considerations given to assistance with costs of home installation of electric clothes dryers.

Entries should be based only on activities performed during the year ending December 31, 1951, and should be postmarked or received by the Edison Electric Institute not later than February 1, 1952. Awards will be presented at the Sales Conference next April.

Thomas W. Martin Award



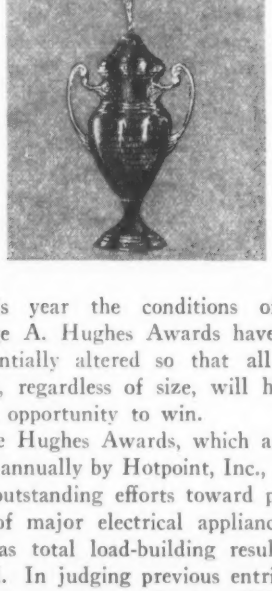
The Thomas W. Martin Award is presented annually to the electric utility operating company which makes the greatest contribution to rural electrification and agricultural advancement in the area served. Established in 1932 by donor Thomas W. Martin, Chairman of the Board, Alabama Power Co., the award consists of a handsome bronze plaque upon which the name of the winning company is engraved.

In judging entries, factors which will be weighed are the agricultural advancement within company area due to increased use of electricity; organization and plans for conducting a rural development program designed to build a more prosperous agriculture (such a program may or may not directly include uses of electricity); cooperation with other agencies concerned with improving farm and living standards; standard of service to farm customers, including new engineering developments on rural lines; and development of farm load.

The merit and success of these activities, without regard to the size of the company, will be the prime considerations of the judges.

The first page of the entry must include the name of the award for which the entry is submitted, together with the name of the author and the company. Entries must be based on activities carried on during 1951 and must be forwarded to the Secretary of the Edison Electric Institute by February 15, 1952. The award will be presented at the Sales Conference next April.

George A. Hughes Awards



This year the conditions of the George A. Hughes Awards have been substantially altered so that all companies, regardless of size, will have a better opportunity to win.

The Hughes Awards, which are donated annually by Hotpoint, Inc., recognize outstanding efforts toward promotion of major electrical appliances, as well as total load-building results obtained. In judging previous entries, no allowances were made for differences in the sizes of competing companies. Now, however, companies will be divided into two size classifications: those with more than 150,000 meters and those with less than 150,000.

Entries in each of these classifications will be judged separately, and duplicate prizes, one for large companies and one for small, will be awarded in five categories of promotional activities: electric kitchens, range, water heater, dishwasher, and commercial cooking.

Prizes totaling $2,400 will be given to winning individuals or groups, along with trophies to winning companies. In the electric kitchen promotion, duplicate prizes consisting of a trophy and $400 will be awarded. In the remaining four promotional categories, the duplicate prizes consist of a trophy and $200.

Entries will be judged upon the ingenuity and originality of the market approach. This includes terms, inducements, advertising, promotion, load-building compensations, and other devices used to create consumer interest. Emphasis will also be given the results obtained by these techniques and the effectiveness and simplicity of their presentation.

Any electric operating utility company in the U. S. and Canada and any individual or group employed by these companies may enter the competition. Entries should consist of straightforward statements of fact, including supporting materials, such as direct mail samples, displays, proofs of advertisements, etc. All entries must be received by the Edison Electric Institute on or before February 1, 1952. Awards will be made at the Sales Conference to be held in April of next year.

Laura McCall Awards

The Laura McCall Awards, donated annually by *McCall's* magazine, were established 11 years ago in recognition of outstanding achievement in the field of home service. This year, new contest provisions have been announced which

increase the chances small companies have of winning.

Five equal prizes of $200, each presented with a bronze plaque, will be awarded in three contest divisions. The winner in Division A must be the director of an electric utility home service department where the entire home service personnel totals more than five people. The Division B winner must be the director of an electric utility home service department employing not more than five home service representatives.

In previous years, departments eligible for Division B were those employing not more than three home service representatives. By increasing this number to five, competition among companies of widely divergent sizes is reduced.

Activities for which awards will be given in Divisions A and B may include, but need not be limited to, the following: home call operation; kitchen planning; education of the homemaker in the use of domestic appliances; home lighting activities; community or educational group activities; home service dealer programs; and company employee education programs.

The three awards in Division C will be presented to individual members or directors of electric utility home service departments of any size. The purpose of this division is to stimulate originality and to publicize the evolution of new home service activities in public relations and sales. Individual achievement in this category may encompass an idea, a project in its formative stage, a published article, a modernized version of any home service activity, etc.

Only one award will be made to an individual or company, but this does not prevent contestants from entering more than one division. A company or individual, however, cannot win the same award for two consecutive years. Activities will be judged solely on merit, that is, originality, value to the industry, and contribution made to the advancement of homemaking through the use of electricity. Thus, they should be outlined in detail and substantiated with as many facts and figures as possible.

Entries should cover activities performed during 1951 and must be postmarked or received by the Edison Electric Institute not later than February 1, 1952. Awards will be presented at the Sales Conference next April.

Planned Lighting Awards

Sponsored by the Better Light Better Sight Bureau and EEI, the Planned Lighting Awards were established to honor outstanding sales promotion programs and educational activities in the field of planned commercial lighting. Specifically, the purpose of the Awards is to give recognition to those electric utilities which are most effective in raising the standards of lighting in their communities.

A total of $1,050 in cash prizes, along with seven handsome bronze plaques, will be given to winning companies or individuals.

Separate entries must be made for residential, commercial, or industrial markets in the area served by the company. Included in the commercial market are stores, schools, offices, etc.; in the residential market, all homes—urban, suburban, and rural; and in the industrial market, all local industries. Entries should specify the class in which they are entered and must cover an entire market. Companies are urged to submit entries in all classifications, for one company may win an award in one or more of the three markets.

In judging the contests, equal emphasis will be given to educational activities and to sales promotion programs designed to sell planned lighting. Under educational activities, the major factors to be considered by judges are (1) education of consumers, including professional, trade, service, or social groups; (2) education of personnel in other branches of the electric industry; and (3) education of company personnel.

Under sales promotion programs, judges will consider (1) program organization and methods; (2) advertising and promotional activity; (3) cooperative activities with local electric industries and trades, either direct or through electrical leagues and associations; and (4) results as shown by quantity and quality of accomplishment.

All electric utility operating companies in the U. S. and Canada are eligible to enter. Entries should cover only programs sponsored during the twelve-month period ending December 31, 1951, and must be postmarked or received at the Edison Electric Institute not later than midnight, February 15, 1952. Awards will be presented at the Sales Conference to be held next April.

Frank Watts Awards

Established "to promote and sell the use of electrically operated farm equipment as a means of improving agricultural productive efficiency," the Frank Watts Awards were presented through the Institute for the first time last year by the donor, Farm Journal, Inc. Open to all U. S. electric power and light companies which provide retail electric service to farm families, the general objective of the awards is to recognize the promotional and sales efforts of electric operating companies in rural areas.

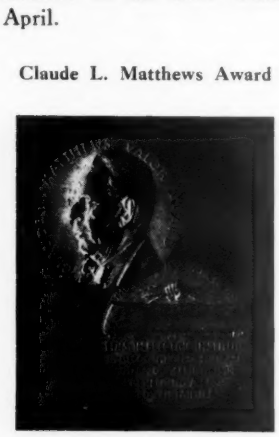
Each of the five winning companies will receive engraved bronze plaques. In addition, the individual employees responsible for the advances in equipment promotion made by the winning companies will share as follows in cash awards amounting to $1,000: first prize company, $300; second prize company, $250; and third, fourth and fifth prize companies, $150 each.

Entries should contain a brief description of the electric light and power company and its service to farm customers. This should stipulate the general area served, number of farm customers, percentage of farms connected, and average kilowatthour consumption per farm.

Companies should also detail the educational activities and sales techniques they employ in the promotion of electrically-operated farm equipment, including advertising methods, cooperation with dealers, demonstrations, etc. (The term "electrically-operated farm equipment" does not include household applications or appliances other than electric water systems and food freezers.) Credit will be given both for the number and type of electrically-operated units sold and the resulting growth of kilowatthour consumption.

Entries should cover only those activities performed during the year ending December 31, 1951, and must be postmarked or delivered to the Edison Electric Institute not later than midnight February 15, 1952. Awards will be presented at the Sales Conference next April.

Claude L. Matthews Award



Open to employees of any electric utility operating company, the Matthews Valor Award was established to recognize "acts wherein extraordinary courage and resourcefulness were exercised, beyond the call of duty, in efforts to maintain electrical service or restore service in the shortest possible time."

The award, made available each year by donor Claude L. Matthews, President of the W. N. Matthews Corp., consists of three presentations of $150 each for deeds of valor performed during the calendar year 1951. A citation and 2½-inch bronze medal will accompany each cash award.

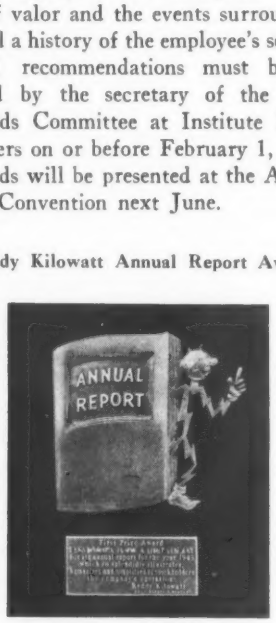
Where two or more employees participate in an act of valor which does not warrant the singling out of one individual above the rest, the money which would have been awarded to an individual will be equally divided among the group, and a medal given each member.

Recommendations for an award must come from the chief executive of the company which employs the individual or group in whose favor the recommendation is being submitted. Recipients of awards will be selected by judges appointed by the EEI Prize Awards Committee. Factors which will be considered in judging a recommendation are the importance of the service affected and the courage, judgment, resourcefulness, and devotion to duty displayed by the employee.

Recommendations should give briefly a citation of the courageous act of devotion to duty, a statement of the duties with which the person recommended was charged, a clear description of the act of valor and the events surrounding it, and a history of the employee's service.

All recommendations must be received by the secretary of the Prize Awards Committee at Institute Headquarters on or before February 1, 1952. Awards will be presented at the Annual EEI Convention next June.

Reddy Kilowatt Annual Report Award



The Reddy Kilowatt Annual Report Award was created to encourage companies to simplify, dramatize, and humanize their annual reports in order to foster improved public relations through greater stockholder understanding of company operations, problems, and accomplishments. Although the award is presented at the Annual EEI Convention, the contest is administered and sponsored solely by the Reddy Kilowatt Service.

The winner will receive a handsome engraved bronze plaque mounted on a walnut shield. Additional companies, to be selected by the four contest judges, will also receive honorable mention certificates.

This year, for the first time, honorable mentions will be awarded on the basis of company size as follows: companies with up to 100,000 customers; those with 100,000 to 200,000; those with 200,000 to 400,000; and those with 400,000 and over. This new condition will permit smaller companies to gain recognition for their reports, for competing companies in each classification will be more nearly the same size than has heretofore been the case.

To enter the contest, which is open to any business-managed electric power and light company, a utility need only send six copies of its 1951 annual report to the Reddy Kilowatt Service, 50 Church Street, New York 7, N. Y. All entries must be received by May 12, 1952.

CEI Conducts Second College Faculty Seminar

SEEKING to develop further cooperation between industrial and educational groups in the training of college students for management leadership, the second college faculty seminar sponsored by The Cleveland Electric Illuminating Co. was attended by more than 40 professors from 22 colleges and universities. Included in the seminar, conducted last September 10-12 at the Statler Hotel in Cleveland, were talks by members of CEI management and visits to the company's properties and industrial plants in the Cleveland area.

The seminar, stated CEI President Elmer L. Lindseth, was held in the belief that it will contribute to the solution of the most important responsibility facing the industry, that of educating people to discharge successfully the duties of management.

"In a period of crisis such as the present," Mr. Lindseth continued, "industry has an increasing need for men who can handle constructively the growing responsibilities of industry with due regard for its social implications."

Commenting on the seminar, the *Cleveland Plain Dealer* said in part:

"Industry is becoming aware that making a good product is no longer enough—it must sell its points of view to its workers and to the general public."

"Nothing but good can come from these efforts to increase the general knowledge of the public about our economic system and how it operates."

Representatives of Pennsylvania Electric Companies and Affiliated Industries Confer at Annual PEA Meeting

KEYED to the theme of "Power for Progress," the 44th annual meeting of the Pennsylvania Electric Association was held last month in Philadelphia with 840 representatives of Pennsylvania electric companies and affiliated industries in attendance. Officers were elected and the Association's annual awards presented at the two-day conference, which heard addresses by leading industrialists, educators, and public figures.

R. A. Gallagher of the Pennsylvania Electric Co. was elected president of the Association for the coming year, succeeding G. R. Conover of the Philadelphia Electric Co. J. M. Huebner, Pennsylvania Power & Light Co., John M. Orr, Duquesne Light Co., and R. G. Rincliffe, Philadelphia Electric Co., were named vice presidents.

Appointed to the Association's executive committee were J. O. Chambers, West Penn Power Co., Harry Ferguson, Pennsylvania Power & Light Co., O. A. Flora, Pennsylvania Power Co., R. A. Manwaring, Philadelphia Electrical & Manufacturing Co., G. W. Ousler, Duquesne Light Co., and G. R. Parry, Metropolitan Edison Co.

Addressing the opening session, H. B. Bryans, President of the Philadelphia Electric Co., warned that the growing scarcity of essential materials, which is forcing electric companies to cut back their expansion program, may seriously affect the defense effort. He also charged that the public power program has as its goal the nationalization of the electric power industry as the first step in securing "a tight hold over all industry and business." The complete text of Mr. Bryan's remarks appears on page 339 of this issue of the BULLETIN.

Franklin H. Lichtenwalter, Managing Director of the Association, stressed the urgency of a united effort on the part of electric companies to meet the requirements of the defense program, and Dean Clarence Manion of the University of Notre Dame College of Law told the gathering that "to win the war of weapons, we must first win the war of words." Our arsenal of peace, Dean Manion said, is the Declaration of Independence, and to save liberty we must revive the faith that supports it.

George M. Gadsby, President of the Edison Electric Institute and President of the Utah Power & Light Co., asserted at the meeting that the electric industry must tell its story forcefully in order to win public opinion and thereby combat the public power bloc. Mr. Gadsby felt that this was being accomplished and said that there "is reason to believe that, in spite of the lure of large Federal appropriations for local expenditures, public opinion is moving away from the socialism pole."

In trying to maintain peacetime consumption while devoting a third of the nation's resources to armament, the administration is not facing the problems of a war economy with courage or efficiency, stated Dean Emeritus Neil Carothers of the Lehigh University College of Business Administration. In this same vein, the Honorable Richard Simpson, Congressman from Pennsylvania and ranking member of the House Ways and Means Committee, scored excessive government spending, excessive taxation, and controls which fail to curb inflation effectively. Congress alone, he said, cannot correct these ills. It needs the support that only public awareness on legislative measures can effect.

Other conference speakers included Dr. J. A. Hutcheson, Vice President of Westinghouse Electric Corp.; Wheeler McMillen, Editor of *Farm Journal* and *Pathfinder;* M. V. Merihue, Manager of Employee Relations, General Electric Co.; and Mrs. Denny Griswold, Editor and Publisher of *Public Relations News.*

E. W. Oesterreich, General Superintendent of Distribution, Duquesne Light Co., received the Association's merit award for his development of pole top resuscitation. As part of the presentation ceremony, a demonstration of the Oesterreich method was given by linemen of the Philadelphia Electric Co.

Awards were also presented to winning companies in the Association's yearly safety contest, which classifies contestants in three groups: (1) companies averaging 2,500,000 man-hours or more annually; (2) those averaging 350,000 to 2,499,999 man-hours annually; and (3) those averaging 1,000 to 349,999 man-hours annually.

First prize for the company with the lowest accident frequency in Group 1 was awarded to the Metropolitan Edison Co. In the same group, the second and third prize winners were the Pennsylvania Electric Co. and the Pennsylvania Power & Light Co., respectively.

Among the Group 2 contestants, the winning companies were, first, the Pennsylvania Power Co.; second, the Pennsylvania Water & Power Co.; and third, the Northern Pennsylvania Power Co.

The winners in Group 3 were, first, the Natrona Light and Power Co., with a perfect no-accident record; second, the South Penn Power Co.; and third, the Home Electric Co.

Among the officers elected at the annual PEA meeting, held last September 18 and 19, were Association President R. A. Gallagher of the Pennsylvania Electric Co. (center) and Association Vice Presidents R. G. Rincliffe of the Philadelphia Electric Co. (left) and J. M. Orr of the Duquesne Light Co.

Power for Progress

(*Continued from page* 340)

day's dollar buys 5 per cent more electricity than in 1940.

Taxes are another high-cost item. Last year the electric utility industry's tax bill was the second largest item of expense, being exceeded only by labor costs. During 1949, the Federal income tax rate was 38 per cent. Today, Congress seems to be in agreement on a 52 per cent tax rate, plus an additional 30 per cent excess profits tax. The full impact of these higher taxes, if enacted, cannot be judged immediately, but in the Philadelphia Electric Co., where we will have an estimated 37½ million dollar tax bill this year, the effect will be to increase annual income tax payments to the Federal government by more than 75 per cent in the short space of two years.[12]

Those of us who have spent our lives in the electric utility industry know that we are expected to give up some things which are accepted as normal rights by others in unregulated business. This is the principle one of our military leaders had in mind when he recently declared that "there are certain inhibitions you accept when you put on a uniform."

We know, for example, our earnings will be restricted by law. We know we must conduct our affairs in a goldfish bowl of regulatory supervision. We know we cannot pick our customers. As soldiers of public service, we are always on call, and we are expected to deliver dependable service day and night, rain or shine, Sundays and holidays, notwithstanding hurricanes, or disaster, or personal danger.

Most of us have been in this business for many years. We in the Philadelphia Electric Co. believe that our great number of service veterans indicates not only the fine qualities of individual employees, but also that the employees themselves find in the company and among their associates conditions and ideals they cherish. This esprit de corps, which is typical throughout the industry, is the keystone of our success and an essential ingredient for continued progress.

I firmly believe the average utility employee has dedicated himself to these ideals and can be counted on, when needed, over and above the normal call of duty. Without this loyalty the planning and high standards of the industry would fail, and our good public relations and sound investor relations would soon disappear.

In the years ahead, I foresee that the work of the electric utility industry will be regarded as a profession. The difference between a profession and any other business vocation is not only specialized knowledge, but also a special sense of duty. The professional man feels indebted to his profession. Regardless of his own personal fortunes, he strives to be a credit to his profession and to keep faith with those who have gone before him.

The electric light and power companies have such a heritage, which has been handed down from the founding fathers of Edison's day. It has been upheld since then by those who have been busy with technical research and improvements, with promotion and expansion of operations, and with winning the public confidence and just recognition which this great industry deserves.

[12] Estimated by Philadelphia Electric Co.'s Taxes Division.

How Many Stockholders in U. S.?

HOW many stockholders own American business enterprises?

The New York Stock Exchange is going to find out by making the first comprehensive census of the nation's stockholder population.

The undertaking was announced by George Keith Funston, president of the world's biggest securities market, in his initial public address since he assumed the presidency of the Exchange on September 10.

Mr. Funston described the census project as a "huge" one but said he believed "that the benefits to be obtained will more than match the work involved."

Current estimates on the country's stockholder population range from 5,500,000 to 20 million people, according to the exchange president. And, he added, "I suspect that the survey will produce evidence that Main Street—not Wall Street—owns the nation's industries."

Thus, he continued, "the political force of the real corporate ownership in America will be highlighted for all to see. The sum of the people who have declared their faith in our free enterprise system will be spread across the record. We will then have the measure of American capitalism in action."

There is no reason whatsoever, he added, to apologize for American capitalism. "Perhaps the greatest fault of capitalism is that there are not more capitalists," he added.

The stockholder census, which already is under way, is being undertaken with the collaboration of the Brookings Institution, which will be responsible for the technical investigations and will publish the findings within a year.

As now contemplated, Mr. Funston explained, the census will embrace almost 5000 corporations. Of that total, 1071 are listed on the New York Stock Exchange; about 680 are on the New York Curb; about 600 (exclusive of dual listings) are on the several regional exchanges, and some 2500 of the companies are traded in the over-the-counter market.

To eliminate duplication of holdings by any one individual, the basic data obtained from the corporations will be adjusted carefully by professional consultants, based upon the information secured through personal interviews with stockholders. The number of beneficial owners of stocks held in trust accounts, in the names of brokerage firms and banking institutions will be included.

The new stock exchange president issued a word of caution on the matter of broadening stock ownership of American industry.

"In urging millions more of our citizens to exercise their potential privilege of ownership, we must recognize the risks involved," he said. "Wider stock ownership is no panacea for Stalinism or Socialism. The purchase of common stocks is no royal road to riches. There is a risk involved in the purchase of any kind of property, whether it is a house, a share of stock, or a bag of diamonds. Only those who can afford to risk—namely, people with Government bonds and savings in the banks, people with life insurance, people with emergency reserves in one form or another—should be encouraged to become shareholders."

Investors should understand, he continued "that a share of ownership involves a calculated risk and that the value of the shares of even our strongest companies move up and down from time to time as a result of a web of interrelated factors such as technological changes, Governmental attitude and fiscal policy, changes in the management of the companies themselves, the mass psychology."

From *The Wall Street Journal*, October 4, 1951.

Accident Prevention Committee Meeting

W. F. Brown, *Chairman*

THE forty-eighth meeting of the Accident Prevention Committee convened on September 13 and 14 in the Hotel New Yorker in New York City. Sixty-six members and guests participated in the sessions, which were highlighted by subcommittee reports on the projects and activities with which the committee is concerned in its effort to reduce human suffering and the loss of life. The meeting marked the inauguration of activities, following a reorganization of subcommittees and reassignment of projects. Organizational charts were distributed, detailing the functions of the committee and the responsibilities of each member in assisting the committee to effectively serve the electric utility industry.

The opening address of the meeting was delivered by A. H. Kehoe, Vice President of the Consolidated Edison Co. of New York, Inc. Mr. Kehoe stated that the safety record of the electric public utilities could be much improved, and that at the present time the problem of accident prevention is approached with too little humility. Mr. Kehoe urged the safety men of the industry to accept the responsibility for each accident and to coordinate team activity to improve the safety record.

H. J. Crisick presented accident statistics for the first half of 1951 of the 43 companies with members on the Accident Prevention Committee. These companies represent approximately 57 per cent of the electric utility industry on the basis of both number of employees and man-hours, and from past experience it is possible from these figures to predict the following accident rates for the entire year of 1951:

Frequency Rate—Predicted at 10.80, down 9.5 per cent over 1950.

Severity Rate—Predicted at 1.70, down 11.3 per cent over 1950.

Performance Index — Predicted at 270, down 8.5 per cent over 1950.

Deaths—Predicted at 110, down 18.3 per cent over 1950.

Mr. Crisick called particular attention to the fact that during the first half of 1951 a marked improvement in accident frequency rate was realized by the larger companies represented on the committee. This rate for ten companies with 5,000 or more employees decreased 20 per cent over a corresponding period of the previous year.

D. C. Stewart reported on the fatal accidents that had occurred in the electric utility industry during 1950. Of the 141 deaths of that year, 102 were due to electric shock and burns. Fourteen deaths are attributed to falls, while nine resulted from motor vehicle accidents. It is of interest to note that during 1950 two women employees of a power company lost their lives in an accident involving a company automobile. This is the first report of the death of female employees in the industry.

Mr. Stewart also summarized the fatality reports of the past ten years and reported to the committee that seven of each ten of the 1,301 deaths that had occurred in the industry during this period were the result of electric shock and burns. It was gratifying to know that the use of rubber gloves has effectively reduced fatal accidents. During the past ten years not one casualty has resulted from hand contacts where gloves were being used in a known danger zone.

An interesting discussion was held concerning the important problem of accident reporting. At the present time the efforts of the committee, as well as other organizations throughout the industries of the country, are hampered by the disparity of methods used in reporting accidents. An accurate comparison of the safety records of companies is impossible if each organization does not define and evaluate each accident on a common basis. A subcommittee presided over by S. H. Young is studying this problem.

A subject of great importance to the committee which currently is receiving critical attention and detailed investigation from several sources is resuscitation. With the present conventional method of artificial respiration being cited by several recent publications as inefficacious, unity of policy on this matter by the electric industry is necessary. Upon recommendation of the Resuscitation Subcommittee, presided over by Wills Maclachlan, the committee officially and unanimously resolved that the attitude of the industry should be as follows:

> The utilities have publicly shown an interest in this problem for over 40 years and, as a result of the constant training of employees, many lives have been saved from electrical shock by the prompt application of either the Prone Pressure Method of artificial respiration or, where necessary, the Oesterreich Pole Top Method. Therefore, at the present time, the utilities hesitate to change from these tried and proven methods until it can be shown in actual cases

Members and guests at the forty-eighth meeting of the Accident Prevention Committee heard subcommittee reports on various phases of the industry's safety problem. Round table discussion also facilitated the exchange of accident prevention information.

in the field that other methods will save more lives from electrical shock. Dr. W. B. Kouwenhoven, Dean, School of Engineering, Johns Hopkins University, presented a progress report of a research project on electrical resuscitation conducted under the auspices of the committee at Johns Hopkins University. This program includes work on the development of a portable apparatus to be used for the purpose of restoring normal heartbeat to electrical shock victims suffering ventricular fibrillation.

R. T. Carton reported on a survey that had been conducted to determine the practices and results of rubber sleeve rules in the industry. This report revealed that the frequency of electric shock accidents due to arm contacts in companies where the use of rubber sleeves is not mandatory is approximately 22 times as great as in the companies where sleeves are required. During 1949 21 men lost their lives due to electric shock and burns on arm contacts.

The success of the seasonal hazards program sponsored during the summer was described by E. J. Kreh. A summertime package containing posters, letters for crew leaders, and sets of leaflets for linemen was prepared, which dealt with safety hazards common to the warm weather months. Mr. Kreh pointed out that over 33,000 sets of leaflets had been distributed to electric utility linemen during the past three months. The program has been enthusiastically received by the industry.

In addition to the subcommittee reports new safety equipment was considered, and the customary round table discussion was conducted by A. F. Randolph. Many topics for presentation in the round table had been submitted by mail prior to the meeting and other questions were posed by members and guests as the meeting progressed. This discussion period is an outstanding contributing factor to the success of the committee activities, since it allows an exchange of accident prevention information among the companies of the industry. Mr. Ruoff, Editor of the committee's *Accident Exchange,* also conducted a discussion period on the problems and suggestions which had been submitted to him for inclusion in that publication.

During the committee luncheon on the first day of the meeting, J. C. Falkner, Manager of Electric Production of the Consolidated Edison Co. of New York, Inc., presented an informative discussion on "Plant Protection."

The Job Ahead in Farm Electrification

(*Continued from page* 344)

fire losses due to heat lamps is evidently due to the improper installation of the lamps and defective or inadequate wiring. Safety in their use is becoming increasingly important, since some insurance companies are increasing insurance rates and others are declaring insurance void if heat lamps are used without having the installation inspected. The Idaho studies show that heat lamps as such are not serious potential causes of fires. The lamp must come into close contact with the litter in pens before fires are caused.

As the use of electrical equipment and appliances continues to increase on farms throughout the nation, the importance of the proper installation of equipment and adequate wiring to serve it becomes of increasing concern to the power supplier and the farm customer. As in the case of the Idaho heat lamp studies, past experience has indicated that the cause for electrical equipment not operating satisfactorily often has been inadequate or defective wiring.

This problem of hazards is one that will probably continue as new uses of electricity are developed, but as each individual case arises it will be solved by the combined efforts of the farm people and industry.

The extent of farm electrification research in progress in the United States can best be appreciated by study of the reports from the land-grant colleges, the United States Department of Agriculture, and the electric industry. My brief comments on the research activities as reported by the Edison Electric Institute are intended only to indicate in some measure the scope of the work in progress.

We can all agree that there is still a big job ahead, requiring the combined efforts of all interested parties to encourage future developments of electrical equipment and apparatus in keeping with the continuing needs and desires of the farm people. The utility companies, as a matter of sound, forward-looking business, are very glad to join with the state colleges, county agents, and others in contributing to down-to-earth practical research and development work of the kind outlined above.

Before I close this discussion, I want to touch on one other phase of the job ahead which in my opinion is of vast importance, that is, preparing the farm boy and girl to fill the roles they must fill in the years to come in advancing electrified farming and electrical living on the farm. For progress in the future it is incumbent upon all of us to see that the ingenuity and resourcefulness, the character and industry of today's farm youngsters are directed so as to assure their interest and enthusiasm in the long climb toward improvements yet to come.

In the past decades in America many of the farm boys and girls have been filling the cities. Future decades may well see a larger portion of them remaining in the rural areas and American agriculture will profit greatly thereby.

They are the ones who dream about new ways to make electricity an even more profitable servant on the farm and they will have the imagination, the energy, and the patience to convert these dreams into practical and fruitful realities.

Research in American industry has proven to be a never-ending but a richly rewarding job. It requires resourcefulness, diligence, persistence, a stubborn unwillingness to be discouraged; but it yields a rich harvest in accomplishment, and while we cannot accurately predict the advances in farm electrification in any particular line, we can be sure that the practical uses of electricity will multiply and that new farm methods and new farm products will make their appearance to swell the demand for electricity to the advantage of all. There is no visible limit to farm electrification. The job ahead is great and inspiring.

No Takers

If their light bill's past delinquent,
And their car is bright and new,
We bet these same good people
Have a television too.

—Royal Briggs,

"Who has experience with long past due accounts," published in *The Front Line,* Iowa Electric Light & Power Co. employee magazine.

PERSONALS

The Board of Directors of The Cincinnati Gas & Electric Co. has named the utility's new power station, being constructed near Richmond, Ohio, in honor of WALTER C. BECKJORD, President of the company.

MR. BECKJORD

Mr. Beckjord, a member of the EEI Board of Directors, has been associated with the utility industry since 1909, when he joined St. Paul Gas Light upon graduation from the University of Minnesota.

The Walter C. Beckjord Station is expected to be placed in operation next June, when the first of its three generators will have been installed. Two of the units will have a capacity of 100,000 kilowatts, while the third will have a capacity of 125,000 kilowatts.

PHILIP S. GREGORY, Vice President in Charge of Power Sales, The Shawinigan Water and Power Co., has been elected a director of the company.

After graduating from University of Bishop's College and, in 1911, from McGill as a bachelor of science in electrical engineering, Mr. Gregory served for several years with the Canadian Westinghouse Co. Ltd., Montreal Tramways Co., and the Electrical Commission of Montreal before joining Shawinigan in 1918. In charge of the Shawinigan system's changeover from 30-cycle to 60-cycle power between 1919 and 1923, he became assistant general manager of the company in 1930 and vice president in 1941.

Mr. Gregory is also vice president and a director of the Quebec Power Co., as well as a director of Shawinigan Chemicals Ltd.

THOMAS G. DIGNAN has been appointed Executive Vice President of the Boston Edison Co. Formerly associated with companies of the New England Electric System, he has resigned as president and director of the Narragansett Electric Co. and the Attleboro Steam and Electric Co.

A graduate of Boston University Law School, he served with the Boston Chamber of Commerce, practiced law, and was general counsel of the New England Power Association before beginning his career as a utility operating executive in 1930. In that year he became general manager of the Lowell Electric Light Corp. and from 1934 to 1940 served as chief executive officer and general manager of the Worcester County Electric Co.

In 1941 he was named president of the New England Power Service Co. and in 1944 was appointed president and chief operating executive of North Shore and Merrimack Valley subsidiaries of the New England Electric System. In 1949 he succeeded to the presidency of the Narragansett Electric Co.

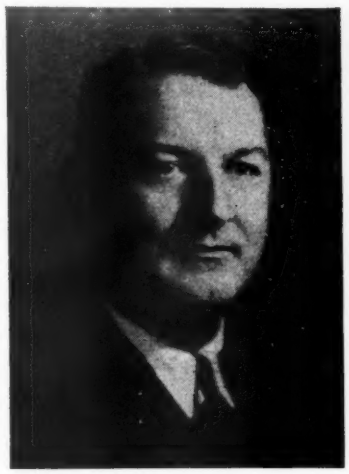
STUART V. WILSON, Faribault Division Manager, Northern States Power Co. of Minnesota, has been elected Executive Vice President of Northern States Power Co. of Wisconsin.

With the Wisconsin and Minnesota companies for more than 25 years, Mr. Wilson joined the Minnesota utility in 1924, serving in Minneapolis and St. Cloud. In 1926 he joined the Wisconsin firm, where he was LaCrosse district manager until 1940. Returning to NSP of Minnesota, he was made southwestern division manager at Montevideo and four years later transferred to Faribault as division manager.

WHITMAN H. RORK, formerly division sales manager, has been named to succeed Mr. Wilson. He has been with NSP of Wisconsin for 22 years.

WILLIAM A. LYONS has been elected Vice President of the New York State Electric & Gas Corp. In addition to his present duties, which include special executive assignments and direction of the company's public relations activities, he has assumed the added responsibilities of directing the company's residential and commercial sales activities throughout the state.

Mr. Lyons joined the company in



MR. DIGNAN

1944 as assistant to the president after having been identified with former affiliated utilities in New York City since 1929. He has continued in that position up until this time.

From 1929 to 1941, he served successively as accountant, assistant to the comptroller, and assistant to the president of the Utility Management Corp. In 1941 he became comptroller of the New York, Pennsylvania and New Jersey Utilities Co., and continued in that position until 1944.

During World War II, Mr. Lyons served in an executive capacity on a dollar-a-year basis in the WPB Office of War Utilities. After the war he continued as a consultant to the Civilian Production Administration and the National Security Resources Board.

H. A. WALSH has been elected a Vice President of El Paso Electric Co. In his new position he will be in charge of new business and public relations. Before joining the company in 1936 to become general sales manager, he was associated with electric firms in Puerto Rico, Port Arthur, Beaumont, and Baton Rouge.

CONVENTIONS AND MEETINGS

1951

OCTOBER

1-2 EEI Prime Movers Committee, Statler Hotel, Buffalo, N. Y.
1-2 Iowa Utilities Association, Management Conference, Fort Des Moines Hotel, Des Moines, Ia.
1-3 EEI Meter and Service Committee, Purdue University, Lafayette, Ind.
1-3 International Association of Electrical Inspectors, Eastern Section, Hotel Claridge, Atlantic City, N. J.
3 Contractors' Group, Electrical and Gas Association of N. Y., Inc., and Independent Electrical Contractors Association Joint Meeting, 480 Lexington Avenue, New York, N. Y.
4 Public Utilities Advertising Association Region 6 Meeting, Lassen Hotel, Wichita, Kan.
4-5 Southeastern Electric Exchange, Engineers and Operating Section Conference, John Marshall Hotel, Richmond, Va.
8-9 EEI Electrical Equipment Committee, New Ocean House, Swampscott, Mass.
8-12 39th National Safety Congress and Exposition of National Safety Council, Chicago, Ill.
9-10 National Farm Electrification Conference, Gibson Hotel, Cincinnati, Ohio.
10-11 EEI Transmission and Distribution Committee, Sheraton Hotel, Rochester, N. Y.
10-12 Indiana Electric Association Annual Convention, French Lick Springs Hotel, French Lick, Ind.
10-13 International Association of Electrical Leagues, Roosevelt Hotel, New Orleans, La.
11-12 ASME Fuels—AIME Coal Conference, Roanoke, Va.
11-12 Pennsylvania Electric Association, Fall Meeting of Transmission and Distribution Committee, Hotel Concord, North East, Pa.
14-16 The Institute of Internal Auditors, Inc., Tenth Annual Conference, Roosevelt Hotel, New York, N. Y.
15-17 International Association of Electrical Inspectors, Southern Section, Hotel John Marshall, Richmond, Va.
15-17 American Gas Association Annual Convention, Kiel Auditorium, St. Louis, Mo.
16-19 National Association of Railroad and Utilities Commissioners, Francis Marion Hotel, Charleston, S. C. (Executive Meeting, Oct. 15).
17 PIP Mid-Atlantic Group, Baltimore, Md.
18-19 EEI Wiring and Specifications Committee, Brown Hotel, Louisville, Ky.
18-19 EEI Taxation Accounting Committee, Hotel Jefferson, St. Louis, Mo.
18-19 PUAA Region 4, Hotel Cleveland, Cleveland, Ohio.
22 Oklahoma Utilities Association, Electric Light and Power Division, Western District, Lake Murray Lodge, Ardmore, Okla.
22-23 EEI Electric Kitchen and Laundry Committee, EEI Headquarters, New York, N. Y.
22-23 PUAA Region 7 Meeting, Edgewater Hotel, Madison, Wis.
22-24 American Standards Association, 33rd Annual Meeting, Waldorf Astoria, New York, N. Y.
22-25 ASCE New York Convention, New York, N. Y.
22-26 AIEE Fall General Meeting, Hotel Cleveland, Cleveland, Ohio.
23 EEI Committee on Interior Wiring Design, EEI Headquarters, New York, N. Y.
24 Oklahoma Utilities Association, Electric Light and Power Division, Eastern District, Municipal Auditorium, McAlester, Okla.
24 EEI Commercial Division General Committee, Biltmore Hotel, New York, N. Y.
24-25 EEI Market Development and Electrical Applications Committee, EEI Headquarters, New York, N. Y.
25 PIP East North Central Group, Mayflower Hotel, Akron, Ohio.
29-30 EEI Prime Movers Committee, Chemistry Subcommittee, Roosevelt Hotel, New Orleans, La.
29-30 EEI Television Committee, Nela Park, Cleveland, Ohio.
29-30 EEI Electric Water Heating Committee, Netherlands Plaza Hotel, Cincinnati, Ohio.
31-Nov. 2 Southeastern Electric Exchange Annual Sales Conference, Roosevelt Hotel, New Orleans, La.

NOVEMBER

1-2 Pennsylvania Electric Association, Fall Meeting of Prime Movers Committee, Fort Stanwix Hotel, Johnstown, Pa.
1-2 EEI Dealer Coordination Workshop, Statler Hotel, Boston, Mass.
5-7 EEI Industrial Relations Committee, Round Table Conference, Netherlands Plaza Hotel, Cincinnati, Ohio.
12-15 NEMA, Chalfonte-Haddon Hall, Atlantic City, N. J.
14-16 Wisconsin Utilities Association, Electric and Gas Sections, Sales and Engineering Divisions, Schroeder Hotel, Milwaukee, Wis.
15 PIP Mid-Atlantic Group, Park Lane Hotel, New York, N. Y.
15-16 EEI Accounting Executive Committee, Hotel Biltmore, New York, N. Y.
15-17 New Jersey Utilities Association Annual Meeting, Seaview Country Club, Absecon, N. J.
21 Electrical and Gas Association of N. Y., Inc., Thanksgiving Luncheon, Grand Ballroom, Hotel Astor, New York, N. Y.
25-30 ASME Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.
26 PIP Steering Committee, Biltmore Hotel, New York, N. Y.
26-27 EEI Industrial Power and Heating Section, Terrace Plaza Hotel, Cincinnati, Ohio.
26-27 EEI Prime Movers Committee, Hotel Traymore, Atlantic City, N. J.
29-30 Pacific Coast Electrical Association, 2nd Annual Hawaiian Conference, Royal Hawaiian Hotel, Honolulu, T. H.
29-30 PUAA Region 3 Meeting, Dayton, Ohio.
30 PIP West North Central Group, Roosevelt Hotel, Cedar Rapids, Iowa.

DECEMBER

3-4 EEI-AGA General Accounting Committee, Hotel Sherman, Chicago, Ill.
5-7 National Association of Manufacturers Annual Meeting, Waldorf Astoria Hotel, New York, N. Y.
7 PUAA Region 2 Meeting, Advertising Club, New York, N. Y.
12-13 EEI Commercial Lighting Committee, Hotel Roanoke, Roanoke, Va.
13 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.
13-14 EEI Commercial Cooking Committee, Terrace Plaza Hotel, Cincinnati, Ohio.
16-17 EEI Dealer Coordination Committee, Stevens Hotel, Chicago, Ill.
20 Electrical and Gas Association of N. Y., Inc., Christmas Luncheon, Grand Ballroom, Hotel Astor, New York, N. Y.

1952

JANUARY

7-8 EEI Accident Prevention Committee, Hotel Roosevelt, New Orleans, La.
13-15 National Appliance and Radio Dealers Association Annual Convention, Chicago, Ill.
14-15 Canadian Electrical Association, Engineering and Operating Division, Eastern Zone, Windsor Hotel, Montreal, Que.
17-18 EEI Industrial Relations Committee, in conjunction with Southeastern Electric Exchange Personnel Section and Southwest Personnel Group, Roosevelt Hotel, New Orleans, La.
17-18 Canadian Electrical Association, Eastern Zone Sales Division, Windsor Hotel, Montreal, Que.
17-24 EEI Marketing Committee, Chicago, Ill.
21-22 Canadian Electrical Association, Eastern Zone General Division, Chateau Frontenac, Que.
31-Feb. 1 EEI-AGA Accounting Committees, Deschler Wallick Hotel, Columbus, Ohio.

FEBRUARY

7-8 Missouri Valley Electric Association, Industrial and Commercial Sales Conference, President Hotel, Kansas City, Mo.

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